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OF

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THE HORTICULTURIST.

VOL. XX.....JANUARY, 1865.....NO. CCXXIII.

POMOLOGISTS AND COMMON PEOPLE.

I do not know that the Horticulturists proper, are the best advisers of a man who wishes—as so many do in these times—to establish his little home in the country, and to make it charming with fruits and flowers and all manner of green things. I think that the professional tastes or successes of one devoted to Horticulture might lead him into a great many extravagances of suggestion, in the entertainment of which, the plain country liver—making lamentable failures—would lose courage and faith. The Pomologists may indeed say that there is no reason to make failure if their suggestions are followed to the letter, and the proper amount of care bestowed. This may be very true; but they do not enough consider that nine out of ten who seek the country, and its delights of garden or orchard, can never be brought to that care and nicety of observation, which with the devoted Horticulturist, is a second nature.

Most men go to the country to make an easy thing of it. If they must commence study of all the later discoveries in vegetable physiology, and keep a sharp eye upon all new varieties of fruit—lest they fall behind the age; and trench their land every

third year, and screen it—may be—in order to ensure the most perfect comminution of the soil, they find themselves entering upon the labors of a new profession, instead of lightening the fatigues of an old one. Any thorough practice of Horticulture does indeed involve all this; but there are plenty of outsiders, who, without any strong ambition in that direction, have yet a very determined wish to reap what pleasures they can out of a country life, by such moderate degree of attention and of labor as shall not overtax their time, or plunge them into the anxieties of a new and engrossing pursuit.

What shall be done for them? To talk to such people—and I dare say scores of them may be reading this paper now—about the comparative vigor of a vine grown from a single eye, or a vine grown from a layer, or about the shades of difference in flavor between a Vicomtesse berry and a Triomphe de Gand—is to talk Greek to them; it is as if a druggist were to talk about the comparative influences of potash and of some simple styptic upon an irritated mucous membrane, to a man who wants simply—something to cure a sore throat.

It is the aim of the Horticulturist to push both land and plants to the last limit of their capacity—to establish new varieties—to provoke nature by incessant pinchings into some abnormal development; whereas the aim of the mass of suburban residents is to have a cheery array of flowers—good fruit and plenty of it, at the smallest possible cost. If indeed the latter have any hope of winning what they wish, by simple transfer of their home from city to country, without any care or cost whatever, they are grossly mistaken. If a mere, bald love of fruit-eating without any love for the means of its production—calls a man to the country, I would strongly advise him to stay in town, and buy fruit at the city markets; and the man who goes into the country merely to stretch his legs, I would as strongly advise to do it on Broadway, or in bed. Nature is a mistress that must be wooed with a will; and there is no mistress worth the having, that must not be wooed in the same way.

But the distinction remains which I have laid down between the aims of the Pomologists and of the quiet country liver. And I am strongly inclined to think that the former are a little too much disposed to sneer at the simple tastes of the latter. There is a sturdy professional pride that enters into this, for something. I have before now been thrown into the company of breeders of blooded stock who would not so much as notice the best native animals—no matter how tenderly cared for, or how assiduously combed down; and yet a good dish of cream most people relish, even if the name of the cow is not written in the Herd-books. Of course that nice discrimination of taste which enables a man to detect the minute shades of difference in flavors, is a thing of growth and long culture, and every man is inclined to respect what has cost him long culture. But if I smack my lips over the old Hovey, or a mahogany colored Wilson, and stick by them, I do not know that the zealous pomologist has a right to condemn me utterly, because I do not root up my strawberry patches and

plant Russell's Prolific or the Monitor in their place. It is even doubtful if extreme cultivation of taste does not do away with a great deal of that hearty gusto with which most men enjoy good fruit. The man who is all the summer through, turning some little tid-bit of flavor upon the tip of his tongue, and going off into fits of rumination upon the possible difference of flavor between a Crimson-Cone when watered from an oak tub, and a Crimson-Cone when watered from a chestnut tub, seems to me in a fair way of losing all the appreciable and honest enjoyment of fruit which he ever had in his life.

There live a small race of pimple-faced men about the London Dock Vaults, whose professional service it is to guzzle small draughts of Chateau Margaux or of rare Port, which they whip about with their tongues and expend their tasting faculties upon, with enormous gravity: but, who in the world supposes that these can have the same appreciation of an honest bumper of wine which a quiet Christian gentleman has, who sits down to his dinner with a moderate glass of good sound Bordeaux at his elbow?

Outsiders may, I think, find a little comfort in this, and take courage in respect of their old Hovey patches—if only they will keep them clean and rich.

But I have not said all this out of any want of regard for Horticulture as an art, demanding both skill and devotion; nor have I said it from any want of respect for those pomologists who are boldly leading the van in the prosecution of the Art; but I have wished simply to clear away a little platform from which to talk about the wants of humble cultivators, and the way in which those wants are to be met.

And here my old question recurs—what shall be done for them?

To give my reply definite shape, I picture to myself my old friend Lackland, who has grown tired of thumping over the city pavements, who has two or three young children to whom he wishes to give a free tumble on the green sward, and who has an intense desire to pick his grapes off his own

vine, instead of buying on Broadway at forty cents the pound. He comes to me for advice.

"My dear fellow," I should say, "there's no giving any intelligible advice to a man whose notions are so crude. Do you want a country home for the year, or only a half home for six months in the year, from which you'll be flitting when the leaves are gone?"

"To be sure," says he, "it's worth considering. And yet what difference could it make with your suggestions? Once established, I could determine better."

"It makes this difference:—if you propose to establish a permanent home for the year, you want to provide against wintry blasts; you don't want a hill-top where a Northwester will be driving in your teeth all November; you want shelter; and you want near walks for your children through the snow-banks to school or church; and you don't want the sea booming at the foot of your garden all winter long. If it's only a summer stopping place you have your eye upon, all these matters are of little account."

"Suppose we make it a permanent home," says Lackland, "how much ground do I want to grow all the fruits and vegetables I may need for my family?"

"That depends altogether upon your mode of culture. If you mean to trench and manure thoroughly, and have good soil to start with, and keep it up to the best possible condition, a half-acre will more than supply you."

"Call it two acres," says he, "and what shall I plant upon it?"

What shall a man plant upon his two acres of ground, on which he wishes to establish a cozy home, where his children can romp to their hearts content, and he—take a serene content in plucking his own fruit, pulling his own vegetables, smelling at his own rose-tree and smoking under his own vine? If he goes up with the question to some high court of Horticulture he comes away with a list as long as my arm—in which are *remontants* that must be strawed

over, vines that must be laid down, vegetables that must be coaxed by a fortnight of forcing, rare shrubs that must have their monthly pinching, monster berries that must have their semi-weekly swash of guano water, and beds of hyacinths that after wilting of the leaves must be dug, and dried, and watched, and put out of reach, and found again, and replanted.

And my friend Lackland reporting such a list to me sees a broad grin gradually spreading over my face.

"You think it a poor list, then?" says he.

"I beg your pardon; it's a most capital one; there are the newest things of every sort in it; and if you cultivate them as they ought to be cultivated, you'll make a fine show; they'll elect you member of a Horticultural Society; Heaven only knows but they'll name you on a tasting committee."

"That would be jolly," says he.

"And you'll need plenty of bass-matting, and patent labels, and lead wire, and a box of grafting instruments, and brass syringes of different capacities, and gauze netting for some of your more delicate fruits, and porcelain saucers to float your big gooseberries in, and forcing beds, and guano tanks, and a small propagating house, and a padlock on your garden, and a Scotchman to keep the key at fifty dollars a month, and a fag to work the compost heaps at twenty-five more."

"The Devil I will!" he says.

"Don't be profane," I should say, "or if you needs must, you'll have better occasion for it when you get fairly into the traces."

And then—more seriously—"My dear fellow, the list, as I have said, is a capital one; but it supposes most careful culture, extreme attention, and a love for all the niceties of the art—which you have not got. You want to take things easy; you don't want to torment yourself with the idea that your children may be plucking unaware your specimen berries; you don't want to lock them out of the garden. As sure as you undertake such a venture

you'll be at odds with your Scotchman; you'll lose the names of your own trees; you'll forget the hyacinths; your "half-hardys" will all be scotched by the second winter; your dwarf "Vicars" that need such careful nursing and high dressing will dwindle into lean shanks of pears that have no flavor. My advice to you is—to throw the fine list in the fire; to limit yourself, until you have felt your way, to some ten or a dozen of the best established varieties; don't be afraid of old things if they are good; if a gaunt Rhode Island Greening tree is struggling in your hedge row, trim it, scrape it, soap it, dig about it, pull away the turf from it, lime it, and then if you can keep up a fair fight against the bugs and the worms you will have fine fruit from it; if you can't, cut it down. If a veteran mossy pear tree is in your doorway, groom it as you would a horse—just in from a summering in briary pastures—put scions of Bartlett's, of Winter Nelis, of Rostiezer into its top and sides. In an unctuous spot of your garden, plant your dwarf Duchess, Bonne de Jersey, Beurre Diel, and your Glout Moreceau. If either don't do well pull it up and burn it; don't waste labor on a sickly young tree. Save

Edgewood, Dec., 1864.

some sheltered spot for a trellis, where you may plant a Delaware, an Iona or two, a Rebecca, and a Diana. Put a Concord at your south-side door—its rampant growth will cover your trellised porch in a pair of seasons: it will give you some fine clusters even though you allow it to tangle: the pomologists will laugh at you; but let them: you will have your shade and the wilderness of frolicsome tendrils, and at least a fair show of purple bunches. Scatter here and there hardy herbaceous flowers that shall care for themselves, and which the children may pluck with a will. Don't distress yourself if your half acre of lawn shows some hummocks, or dandelions or butter-cups. And if a wild clump of bushes intrude in a corner don't condemn it too hastily; it may be well to enliven it with an evergreen or two—to dig about it, and paint its edges with a few summer phloxes or roses. You will want neither Scotchman nor forcing houses for this."

This is the way in which I should have talked to my friend Lackland, who would want to take things easy.

I shouldn't wonder if he were to buy his place of two acres, and make trial. God bless him if he does.

NEGLECTED FLOWERS.

BY EDWARD S. RAND, JR., BOSTON.

WE might well be pardoned for supposing that in the floral kingdom there would be entire independence of the dictates of fashion. This is, however, far from the fact; flowers have their days of popularity and of neglect; the favorite of to-day is little cultivated in a few years, and may be succeeded by a plant which, once a well-known inhabitant of the garden, has been for years lost from sight. We can all call to mind flowers which were once popular but are now seldom grown, and which have not lost their popularity from any fault of habit, difficulty

of culture, or lack of beauty in foliage or bloom. The passion for "novelties" aids in consigning many a little gem of a flower to neglect, and is thus productive of a bad effect on floriculture. This demand for what is new, exercised in moderation, is a potent means of progress and improvement; to it we owe many of the finest ornaments of our gardens and greenhouses; for its gratification almost every region of the globe has been penetrated by the "collectors" sent out by national or private enterprise, and the discoveries made have well repaid

the cost. But as an offset to this a "rage" has been created for "novelties" which demands gratification, and the florist must cater to it by supplying new plants to meet the demand. Thus we see in catalogues each year a list of "novelties," often plants imported at great expense, and quite as often perfectly worthless. Another year these favorites of a season are thrust into a "general collection" list, even from that, they soon disappear and in a few years are lost to cultivation, supplanted by other "novelties," or by improved flowers of the same class. This is particularly the case in "bedding plants," as any one may see by comparing a catalogue of the present season with one of a few years since; yet every florist knows that with a few exceptions the varieties of verbenas, heliotropes, chrysanthemum, etc., of five years ago were quite as good as those of the present spring, though, perhaps, few would be willing to acknowledge the fact.

This passion has lately been more extensively developed in bedding and stove plants;—in the former little gain has been made, in the latter there has been progress, and great additions and acquisitions have been made to our hot-house collections.

It is rather noticable that green-house plants and hardy perennials and bulbs have in a great measure escaped, and that in the former most of the new plants have been desirable for general culture.

If florists would prove a plant before they send it out, many plants which are thrown into cultivation would be withheld, but the custom is to import plants with high-sounding recommendations of foreign florists, propagate a large stock, throw all upon the market, and often a purchaser blooms the plant before the original importer.

Many plants suitable for the climate of Europe are worthless with us, and the converse is also true: therefore no plant should be imposed upon the public until we have given it a fair trial in our climate.

There are, however, many plants which recommend themselves to all, and which

have been favorites of years gone by, which have been almost driven from cultivation by plants of inferior merit.

The object of our article is to call attention to a few "neglected favorites," or to plants which are very little known, but which will well reward the florist's care.

TOURNEFORTIA HELIOTROPIOIDES. This is a very ornamental little plant, with some resemblance both to a verbenas and heliotrope. It is perennial, native of Buenos Ayres, and, though not hardy in the open air, can easily be wintered in a cold frame. The foliage is neat dark-green, like a verbenas—the flowers, in size and shape like a heliotrope, of a bluish lilac color, are produced in large terminal racemes, (so to speak) and flower from bottom to top, new buds being produced in succession, as in the heliotrope. We know of no more effective plant combining so many good qualities for a small bed. The plant is very floriferous, easily propagated by cuttings, or by seed, which is freely produced, of rapid growth, and will bloom freely into November. Plants from seed sown in early spring will begin to bloom in May and continue through the season. The plants should be set at least a foot apart, as they grow rapidly and with great vigor. The only thing to be desired in this lovely little flower is perfume, of which unhappily it is wholly destitute.

MIRABILIS JALAPA. "Four O'clocks."—A plant meriting general cultivation, and a splendid object in the garden from August till killed by the frost. The habit of the plant is branching, the flowers are produced at every joint, and fairly cover the plant. They somewhat resemble a small morning glory, but have a tube varying from one to three inches in length; the colors are red, white and yellow, with all conceivable shades and variations of these colors, all of which are often produced on the same plant, indeed except in selfs it is difficult to find any two alike. The habit of the plant is symmetrical and very bushy, the height is about fifteen inches. In dull weather the flowers do not expand, but on clear days

the plant is a mass of bloom most of the time. The flowers abound in honey and are very attractive to butter-flies, moths and humming-birds, which afford us an additional reason for recommending the plant. The culture is simple; sow the seed in pots in a hot-bed; transfer the plants to thumb pots and grow them until all danger of frost is over; turn out into a bed of rich earth one foot apart; they will only require to be kept clear of weeds, and will soon show bloom. When the foliage is blackened by the frost, take up the long fusiform roots and keep them in the cellar like a dahlia. The succeeding spring start these like dahlias and plant out; they increase in size every year, we have had them as large as a peck measure. The plant is a native of the West Indies, and has been in cultivation since 1596. *M. longiflora* is a very singular species from Mexico, with tubs three inches in length. The flowers of all the species are very fragrant.

AGAPANTHUS UMBELLATUS, or "African Lily." This beautiful plant is much neglected, and although generally cultivated is seldom seen in perfection.

All the species are natives of the Cape of Good Hope, and bloom from June to September. The leaves are liliaceous, the roots long, thick and fibrous, the flowers of all the species blue, produced in an umbel terminating a long stout stem. The plant will bloom under any treatment, but careful culture is well repaid by increased size, number and brilliancy of color in the flowers.

As generally grown, it is thrust under the green-house stage in winter, and left to take care of itself until the other plants are turned out in the spring, then it is put on the stage or set out of doors, with no care to re-pot or enrich the earth—it blooms in August—and on the approach of frost is again put under the stage. We have grown this plant most successfully under two opposite modes of culture. It is admirably adapted for summer decoration out of doors, but if planted in the garden seldom blooms. We therefore in early spring set in a tub

made of half a barrel (an oil cask with iron hoops is the best) five plants, the largest in the centre; let the soil be well rotted manure and leaf mould, (the plant is a gross feeder and the soil can hardly be too rich) set the tub out of doors as soon as danger of frost is over and water liberally once or twice a day, as may be necessary; the plants will bloom in August, and also throw off many suckers: let all grow together; in a few years the tub will be filled with a solid mass of roots, then water with weak liquid manure (cow-dung and water is the best) and the plants will throw up fine spikes of bloom year after year, and the plant will be a conspicuous feature on the piazza or in the lawn. The winter treatment is simply to remove the tub to a light dry cellar free from frost, just before the nights begin to be frosty, water once a week during the winter, only giving enough to keep the roots from shrivelling.

Our other mode is: select a large plant, pot it in rich soil as above in a pot large enough to contain all the roots. As the plant grows and the roots touch the sides of the pot, repot and continue to do so as the plant grows. Remove all suckers as soon as they appear. The flower stem will be very strong, and the flowers larger and more numerous; winter the same as above.

The species we have mentioned (*A. umbellatus*) is that most commonly grown, the others, *A. minor*, and *A. precox*, and the varieties of *umbellatus* with white flowers (var. *albidus*) and with variegated foliage (var. *variagatus*) and blue flowers are very distinct.

HYDRANGEA HORTENSIS, too well-known to need description is a noble object if grown in a large tub as directed for *Agapanthus*: the soil should be well rotted dung, loam and peat, broken up but not pulverized. Treat the plant in every respect like the *Agapanthus*—the two plants side by side contrast well. The flower is naturally pink—a few iron filings mixed with the soil will give us light blue flowers. The plant will lose its leaves in winter in the cellar, and should have only water

enough to prevent it from drying up until again started into growth in the spring.

IRIS PERSICA, the Persian Iris. While the crocus and snowdrop are commonly planted for early spring flowers, this lovely little plant is hardly known and very seldom cultivated. It is a native of Persia, has been introduced about two hundred and fifty years, is perfectly hardy, blooming early in April in warm sheltered situations: The bulbs are small, requiring the same general treatment as Dutch bulbs for garden bloom: the plant grows about three inches high, the leaves are glaucous green, the flowers pale blue, orange and black, very freely produced and exquisitely fragrant. A clump of this little "spring beauty" is one of our choicest spring treasures; while we have grown it for years, we have seldom seen it except in our own garden. If left in the ground, the bulb takes care of itself from year to year.

OMPHALODES VERNA, Navelwort—improperly called *Cynoglossum*—Hounds tongue, is a delicate little blue flowering plant, the blossoms much resembling the forget-me-not (*myosotis*). It is a perennial, native of the South of Europe, and perfectly hardy, flourishing in any garden soil, yet rather apt to die out in dry situations. About the middle of May the plant is a mass of flowers of the liveliest blue. In England the plant is found in every cottager's garden, and is a general favorite; it is strange it is so little grown in this country.

PHASEOLUS CARACALLA. This beautiful species closely allied to the Scarlet Runner Bean, (*P. multiflorus*) is a magnificent or-

nement of the green-house or stove. In foliage it much resembles the common bean, but its flower is remarkably beautiful; the banner and hood of the flower are spirally twisted, unlike any flower with which we are familiar—the flowers are very large, resembling a bean, color yellowish and purple, or purple and white if grown somewhat in the shade, highly fragrant, and very freely produced. The plant is a perennial of easiest culture, requiring to be planted out in the green-house border: like most of the family it does not succeed in pot culture—the root is tuberous, perennial—the plant is very subject to attacks of red spider, which can only be kept under by frequent syringing. It blooms all summer, and often into the winter; propagated easily by seeds or cuttings.

JEFFERSONIA DIPHYLLA, Twin Leaf.—Like many of our fine indigenous plants, this beautiful little spring flower is little known. The foliage is very beautiful, each leaf being exactly folded together; the flower is white, somewhat resembling the bloodroot, (*Sanguinaria Canadensis*) and blooming about the same time; the seed vessel is very curious, the top lifting off by a hinged lid when the seed is ripe. The plant is a hardy perennial, native of Virginia and the lime-stone districts of New York. It would prove a great acquisition to our stock of spring blooming flowers.

There are many other plants we had proposed to mention, but the list is so long a further notice must be delayed till a future number.

Glen Ridge, Dec., 1864.

MODEL SUBURBAN COTTAGE—IN THE OLD ENGLISH, OR RURAL GOTHIC STYLE.

BY FREDERICK S. COPLEY, ARTIST, TOMPKINSVILLE, S. I.

THE general appearance of this Cottage, as seen from the road, is shown in the engraving, (Fig. 1.) which is a perspective view of the North and East Fronts.

It is situated at Montrose, on the Lake-

like shores of Hempstead Harbor, near the village of Roslyn, Long Island, a spot noted for its beauty and healthfulness.

Size of building, 44 by 38 feet. Principal Plan (Fig. 3.) 10 feet high. P. shows

a recessed porch, with double doors of oak, (oiled) the outer ones open, to be closed only at night and stormy weather, behind the one on the right is a space for wet umbrellas, &c., the inner doors have glazed panels to give light within, and should be always closed. V. is the vestibule, containing a spiral staircase, with walnut steps and rail (oiled). The floor laid with encaustic tiles, with ceiling grained, and walls finished in imitation of stone in the sand coat. On the left (under the stairs) is a private

door opening into a lobby, fitted with wash-basin, water, &c., and lighted by a narrow window, that also serves to light the front basement stairs, so that a servant could answer a call, at either front or back doors, without passing through the Central Hall; which would not only be more convenient for them, but would be to the family and guests, especially in time of company, when the Hall would form a central room, by closing the doors that lead to the stairs: nor would this interfere in the

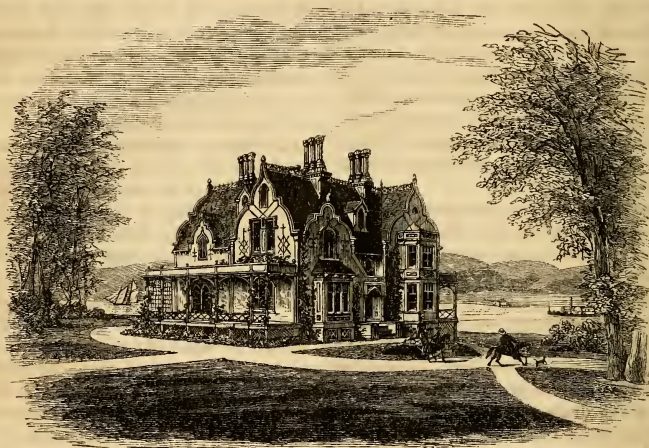


Fig. 1.—Perspective.

least with the domestics, or their duties: as they can go from cellar to attic without disturbing the privacy of a single room: and the guests could ascend, unseen to the dressing rooms above, (from either entrance) or depart the same.

The hall screen, separating the vestibule, should be of real oak, (oiled) and lighted in the panels with stained glass, which would impart a soft and pleasant light to the hall, and produce a fine effect on either side, day or night. The Hall is here placed in the centre of the plan, and so happily arranged are the doors and rooms, as not only to give it a symmetrical effect, but

to unite the whole, *en suite*; without disturbing the individuality of either. Also, the hall lamp and stove would light and warm, equally, every room, besides passage, vestibule, and stairs. The Cloak Closet is in the passage which contains the back stairs.

P. is the Parlor, which would be the favorite living room in the summer, as it faces the north, and has a large bay-window commanding a fine view down the harbor to the sound.

L. is the Library, and living room, connected with the parlor by sliding doors, with recessed book-cases, on each side, and

the same on the sides of the bay-window, here facing the south, and possessing a beautiful view of the bay and hills, with the village in the distance, which make it the favorite quarters in winter, being fully exposed to the genial influences of the sun during the absence of foliage at that season. On the right of the mantel is a

private closet for plate, papers, &c., both these rooms have windows opening on the west veranda, with a fine view across the harbor. D. is the Dining room, and a most cheerful one, (as it should be,) with a large ornamental window on the east, admitting the morning sun, and a fine bay-window on the north, looking down the road and har-

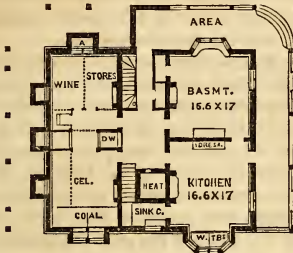


Fig. 2.—Basement and Cellar.

bor, possessing a charming prospect of land and water. To harmonize with the bay (on the other end) is the sideboard recess with a dumb-waiter on the right, and a china closet on the left; on one side of the mantel is the door opening into the lobby, which communicates with the hall, and basement plan below, and fitted with wash-

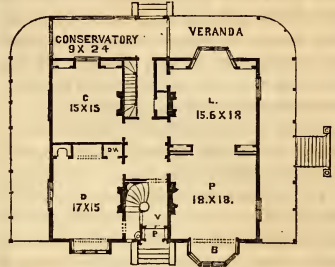


Fig. 3.—First Floor.

basin, water, &c., which would be found most convenient to wash hands or glasses, delicate or valuable articles of use not wished to be trusted to careless servants. It will be seen that the three bay-windows on this plan, are of different forms, and each fitted with inside shutters. C. is the principal chamber, or boudoir, facing south

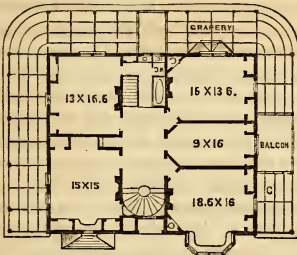


Fig. 4.—Second Floor.

and east, with fine large windows in each. The one on the south has closets on each side, and opens into the conservatory, making this a most delightful ladies' work-room. It will be seen that all the rooms on this floor, although not large, are of the most comfortable size, perfect and elegantly pro-

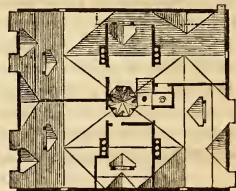


Fig. 5.—Attic and Roof.

portioned, and arranged with every conceivable convenience requisite for the enjoyment of all the comforts and luxuries of life.

Chamber Plan (Fig. 4.) is nine feet high, and in keeping with the rest, in its admirable arrangements, furnishing five excellent rooms, with a bath room, convenient to all,

fitted with the latest improvements, (the water closet enclosed, and vertical pipes, which would make freezing impossible). The four principal rooms are about equal in size and attractiveness, as they possess the same fine views as the corresponding ones beneath, and each finished with fire-places and ample closet room. The small room windows open on a balcony, with a charming view of the bay; and would afford an agreeable lounge in summer evenings, to enjoy the setting sun, or cool breeze. All the rooms on these two floors (except the last) to be fitted with Dixon's patent grates, and Arnott's ventilating valves, which would secure sweet and healthy, warm rooms, without draughts. The hall, as will be seen, is well lighted and ventilated, not only by the staircase window, on the north, but by the ventilating sash-lights over the doors of every room; the bath room door is also lighted in the panel with ground glass. Between the doors, on the east side, is the lift, or dumb-waiter, and dust register, which being in the centre of the plan, is of equal convenience to all.

Fig. 5. shows the roof and attic plans, which contains five good rooms for the accommodation of the servants, storing fruit, trunks, &c., and drying clothes. As this plan has the same central arrangements as all the rest, consequently the same advantages in economy of space, and of direct and easy access to every room, stairs, &c. The landing here is lighted in the same way as the hall below, and by the same staircase window, with the addition of a large sky-light and ventilator in the centre, which would keep the rooms sweet and cool.

On observing the relative position of the different doors and windows, in the several plans, it will be found that the house may be ventilated by through drafts in every direction at pleasure; a luxury to be appreciated in the heat of summer. Also, by carrying the lift, or dumb-waiter, to the top of the house, and communicating with every floor, its full value would be secured, besides forming a ventilating shaft for the

whole building, from cellar to attic. Another valuable labor-saving convenience (next to the water-works and lift) is the dust shoot, which is simply a tin tube, with registers in the floors of the different plans, to sweep the dust into, from the rooms, where it descends to the cellar, and is caught in a barrel, to be removed when full. It is here placed in the hall, by the side of the lift, on every floor, which by this central arrangement is at the door of every room.

Fig. 2, shows the Basement and Cellar plan, nine feet high, and containing every requisite convenience for the domestic duties of a family. As they are on the same level, and under the principal story, would exclude the noise and smell of the kitchen. The garden entrance is shown by the steps on the south-west corner of area, which extends the whole of the west side, round to the hall door on the south; and covered by veranda, would make these rooms dry, cool, and pleasant, as they are but little below ground, and well lighted on two sides, with a large bay-window in each; the north bay fitted with wash-tubs, as this kitchen is intended as a back one, or scullery, and for cooking in during the heat of summer, it has a sink closet on the left of the fire-place, and dresser and shelves for pots and pans on the south side, by which, is a door opening into the basement, and one out on the area. The basement would be a cheerful room, facing the south with a large bay-window with seats and inside shutters, on the opposite side is a dresser fitted with plate rack, &c. On the east is the range and pantry; behind the range in the hall is a warm closet for cloths, shoes, &c., and opposite, under the stairs, is a dark one, for potatoes. At the north end of the hall, (and behind the scullery, fire-place, &c.) is the furnace room and front basement stairs. On the east side of the hall is the dumb-waiter, or lift. The Coal Cellar has two bins placed under the shoots, for large and small coal, with two on the east side for ashes and wood. Against the middle window is a wire gauze safe, for cooked meats, &c.; between this and the Wine Cellar is

the Dairy; the other division is for stores in general. All the partitions are made open, so as to admit the free circulation of light and air.

Construction, although of wood, is made nearly fire proof, by making the floors, walls, partitions and stairs solid. The walls and principal partitions are formed of slats of one inch thick by four inches broad, securely nailed one on the other, so as to form a one inch groove on both sides, to plaster on. This forms a good strong six inch solid wall, fire and vermin proof, and dryer than any built of stone or brick. The stairs to have their skeletons of iron work, filled in solid with cement. The floors of basement and entry to be of earthenware tiles, the kitchen and cellar cemented. That of the principal plan, (forming the ceiling of the basement, &c., the seat of danger,) should be formed of brick, arched on iron girders, and filled up with cement, and laid with larch, (as that burns less freely than any other wood). The hall, &c., to

be laid with encaustic tiles. The floors of the chamber plans to have their timbers coated with plaster paris, and filled up with mortar and laid with larch. With the plastering of the ceilings, &c., on wire gauze, instead of lath; a slate roof, and the walls of the basement plan of hollow brick, and plastered on the inner surface. By these simple and inexpensive means, the house would be nearly fire proof, and life and property secure.

The exterior is covered by a sand coat, of a cheerful and rich, light brown ochre tint, it being the most befitting for the situation and design, besides possessing the advantages of economy, and imparting a more substantial effect, it avoids that harsh and disagreeable glare and glisten of paint.

"Thus the design may be characterized by convenience, architectural propriety, picturesque effect and simplicity of decoration, while it possesses the essential recommendation of being within the limits of economy."

THE GRAPE CROP IN THE WEST.

BY R. BUCHANAN, CINCINNATI, OHIO.

OF late years the cultivation of the grape in vineyards has spread so rapidly over the Western country as to become an important item in our agricultural productions, and require an occasional notice of its progress. Time and experience have placed it beyond a mere experiment, and it may now be classed with other regular crops of the soil.

Like all other crops it is subject to casualties, and has its good and bad years, but is generally about as reliable as the apple, one of the hardiest of our fruits.

This year, owing to the severe frosts of winter, which destroyed about half the buds of the vines, and a changeable summer, causing mildew and rot, the vineyards in the Ohio Valley did not yield more than one-fifth of an average crop, in Missouri and Illinois about one-third, and on the island and shores of Lake Erie about half a

crop, so that this may be called one of our bad years—in the Ohio Valley, certainly, the very worst. The average product of our vineyards for a series of years is about 200 gallons of wine to the acre, the same as in France and Germany. To illustrate the variation of this crop in different years it may be stated that my own vineyard of seven acres, planted with the Catawba grapes twenty years ago, the vines in rows 3 by 6 feet apart, and producing 17 crops, gave an average annual yield of near three hundred gallons to the acre up to this year, when it scarcely produced twenty. The largest crop was in 1853—847 gallons to the acre; the next best, 582 gallons in 1859, and the worst in 1864, about 20. The vineyard is favorably situated, and generally well cultivated. Vineyards in good localities, with even moderate attention, have always been remunerative. For example,

the one just mentioned, produced last year 2,200 gallons of wine, which was sold at \$1.60 a gallon three months after the vintage; this year only 130 gallons—the worst crop out of 17—but the two years together will pay expenses, and leave a fair profit. The annual expense of such a vineyard will range from \$700 to \$900. Residing in the country, but devoting most of my time to business in the city, the vineyard has been a mere hobby, and has not received that personal attention that it required. Many of our practical wine growers have done better.

On the islands and the southern shore of Lake Erie, where the climate is tempered by the influence of the lake, the grape crop is more reliable than with us in the Ohio Valley, and the profits greater. The grapes are packed in boxes and sold in the large cities, but little being made into wine. In that region the vines are usually planted eight feet apart, and trained on trellises.

At the German settlement of Hermann, Missouri, the principal vineyards in that State are to be found; and in Illinois and on both shores of the Mississippi, as high up as St. Paul, the grape is cultivated with varied success. Wherever a German settles down in the West, you are sure to find the grape vine; they appear to have a natural affinity for each other. Some very intelligent and successful vine-dressers reside at Hermann, and their wines have a high reputation in St. Louis and other markets.

Something might be said about the different kinds of grapes cultivated in the West, and of such as are suited to the localities of its diversified climate, and of new varieties now being tested, but it would make this article too long. The subject may be referred to in another number.

Clifton, near Cincinnati, }
12th Nov., 1864. }

AN HOUR IN THE VINEYARD.

BY JOHN S. REID, FAYETTE CO., IND.

It is now more than one year since I have had the pleasure of communicating to the *HORTICULTURIST*, or of corresponding with its numerous readers, through its pages, and perhaps no apology is required for my silence, as this in itself, is sometimes the very best apology.

Be this as it may, having now some spare time on hand which I can give to "horticultural reflections" on the events of the past season, I embrace the opportunity and send them to you.

The fall and winter months of 1863 closed with an excellent prospect of plenty of fruit for the orchard and vineyard of 1864. The apples, pears, peaches and cherries never looked better, and the buds of the grape, the raspberry, currant and blackberry seemed all plump and sound; but during the month of Jan., 1864, the thermometer fell from 20° above Zero to 10° and in some

localities to 16° below in one night, and ruin and destruction was the result, to almost every orchard and vineyard in our valley, so that we have had neither pears, peaches, cherries, grapes, raspberries, blackberries, or currants; and apples only in some favored situations, and few in number of them.

Now, many will assert that a cold of 10 degrees below Zero will not have the effect on the fruit-buds here described, but the *Fall* had been extremely mild and temperate, and on the evening prior to the morning of the severe frost, the air was soft and balmy for that season of the year, hence it was not the mere fact that the cold of the morning was equal to 16° below, but the suddenness and extent of the change.

What was the result in March, when I began to trim the vineyard and prepare for spring operations? it was this, that I found

the *wood* of the canes apparently sound, but the *buds* all dead, with a few exceptions, and my prospects of a fruit crop entirely blasted.

Well, what did I do, will be the enquiry of many at a time. Did I cut down my canes or let them stand, in order to test the power of the vine and vitality of the cane in forcing a second bud, for many have told me that the second bud is equally as good as the first.

My gardener, who has had some more experience in vineyard culture than myself, tried both experiments. Some he cut down to one bud, and others he left trimmed, with one cane of five or six buds; so that, acting on the principle of the cook of the celebrated Dean Swift, who was fond of eggs, but very hard to please in the cooking—demanding them sometimes boiled soft and sometimes boiled hard—to please the Dean, he placed his eggs one day in the hot ashes, ends up, and presented them to his Worship—hard and soft under the same shell. But he was more fortunate than I, for neither plan availed, except in the vines of the Delaware and Clinton, each of which gave a few bunches, trimmed on the one-eye mode.

The special results were as follows:

Union Village, killed to the ground.

Clara, do. do.

Rebecca, do. do.

Lincoln, do. do.

Anna, do. do.

Herbemont, do. do.

Except a few old vines which were sound in the buds nearest the earth.

Catawba, killed in the bud—canes sound.

Diana, do. do. do.

Concord, chiefly killed in the bud. do.

Isabella, do. do. do.

Delaware, injured in the bud. do.

Clinton, do. do. do.

Since then I have laid in a small supply of Iona, Israella, Adirondac, and Page vines, which are all doing well, and now, October 26th, 1864, my stock of vines of every description never showed a more healthy or vigorous appearance.

But, if I lost in grapes this season, I made up in strawberries, which were exceedingly plentiful, of excellent quality and flavor.

So far, the kinds propagated by me have been,—Wilson's Albany, Hooker, Hovey, Triomphe de Gand, to which I have added Russell's Prolific, Jennings's White, and a few plants of the Agriculturist's celebrated variety; and if I had the Mead's Seedling my stock would be complete. Of raspberries I have some of almost every new variety, but out of them all I cannot recommend any special variety, they are all so good, and, except this season, have always done so well.

But let us return again to the grapes. I long to see grown, in this valley, a first rate Delaware; and although I have given this vine the preference in soil and situation, still I cannot realize any show of grape fruit equal to what is claimed for it in the books.

The Page grape referred to in this article is said to be a seedling of the Herbemont; in bunch and berry, large; color, white; quality, best. Some think that the grape is a seedling of great merit, but not having been thoroughly tested, it cannot take rank with the Delaware or Iona. My own opinion of it is that it is an excellent table grape, but tender, and will require protection in winter. I have a number of seedlings of my own, and which should, and I think would, have fruited this season had they not suffered in January with the frost. Two of them offer well in the appearance of the leaf and wood, and if good in the berry, as I know that they are hardy, equal to the Isabella, they may prove of some value.

From my vineyard, one year ago, I made 250 gallons of most excellent wine, which is now ready for settling; but this season is a complete failure, having not gathered one bushel of grapes from all my vines. Running over the pages of the *HORTICULTURIST* for some two years past, I find the enquiry frequent as to the mode and manner of making pure wine, and the grapes which are best for this purpose.

Having once, through your pages, given the way how I make my wine, I have nothing to add that would be of much value, but I am, like others, enquiring for *the* grape. During last year I made a barrel of wine from mixed grapes, such as the Catawba, one-half; Clinton, one-fourth, and Concord one-fourth; and the product is a wine of a red color, superior to the pure Catawba—one which, both to the eye and taste, commands a decided preference. From what I have seen of the Delaware

wine, I have no doubt of its superior quality, but I am afraid of the lack of quantity, or yield of juice, or in the number of bushels or pounds from the acre, as compared with the Catawba.

And now allow me to hope for better success for the year 1865, so that our yield of fruit and wine will be blessed with an abundance, and that peace and happiness may once more be restored to our beloved land.

RURAL FOOTPRINTS.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

It has been the burthen of modern writers on horticulture, and of the gentlemen who come out of great cities to deliver eloquent addresses at our agricultural fairs, that we tillers of the soil should not only attend these annual exhibitions, but that we should take time to visit one another, that each might thus learn something of what the other was doing. Even the editorial fraternity—the wielders of the pen and scissors—upon whom so many thousands of us pin our faith concerning the merit of a new process, a freshly invented turnip slicer or sausage stuffer, or the last new strawberry, which by some singular good fortune is certain to be the best—even these are prone to repeating the same recommendation that the farmers of one township should precipitate themselves on those of another, not to spy out the nakedness of the land, but its abounding fatness. I cannot remember that any distinguished lecturer has thus invited all the world to come and see *him*, though freely exhorting it to call upon his neighbors. The suggestion was a good one for the world; but the neighbors must speak for themselves. Moreover, it presupposes, and with a diffident propriety peculiarly charming, the idea that no one of us knows everything—a fact of which some of us must have long since let in a very decided suspicion—and

that by thus exchanging visits we must of necessity enlarge our stock of knowledge touching what belongs to our particular vocation.

The pensive public, thus stimulated by pen, by tongue, and by press, are not slow to adopt these hospitable recommendations. There are circumstances in the case of particular individuals that do not seem to require so powerful a combination of stimulants to curiosity, as some who read this can testify. There are searchers after knowledge who, of their own volition, go everywhere. Travellers are proverbially well-informed men. If they traverse the world, it is with the world itself that they become acquainted, accumulating facts and experiences of which they would learn nothing in a lifetime spent at home. It is no less true of every cultivator of the soil. In his own way he should be a traveller also, and should visit not only the celebrities of his profession, but his unpretending fellow cultivators. He can go nowhere without learning something instructive or encouraging, seeing something to imitate, or something to avoid. A hint dropped by an intelligent cultivator may be worth hundreds of dollars to him, just as a single paragraph in an agricultural paper touching prices, has saved to the reader even a larger sum.

In ancient times the English law required a young man, on completion of his apprenticeship, to travel over the country a certain number of years, working at his trade, before he could be licensed to make a permanent beginning for himself. The object was to compel him to become familiar with the different modes in which other craftsmen conducted the business he had learned, so that by knowing all, he might become a perfect workman. Traveling from one farm to another, to learn what was going on upon each, how this or that process was conducted, what machines were successful, which were failures, what was the most profitable fruit crop and how best to produce it, who had the most successful green-house, and how it was built and heated, with the long catalogue of items on kindred topics—would be a mere repetition of the English obligation to become perfect in the farmer's calling.

There are times throughout the year when most men can indulge in this useful recreation, and there are those who systematically devote to it a portion of every season. It serves instead of idling away time at the seashore or the springs, besides being infinitely cheaper. I have indulged in it myself, and have rarely gone anywhere without learning something that was new to me, and many times useful. On some occasions I have stumbled upon great establishments belonging to wealthy men, where the surroundings were so magnificent, and the details so highly elaborated, as to sink, even in my own estimation, the modest holding whereon I have been operating. I was satisfied with it until I saw what the wealthy man had done. But if there were regrets, there were compensations at hand. The condition of the adjoining farm was in strong contrast with that of the millionaire and of my own. The lights and shadows of agricultural management thus succeeded rapidly to each other. If the former dazzled and abashed me, the latter fell gratefully on the discouraged spirit—it was a sort of comfort to be assured that there were worse farmers than myself.

Curiously enough, I generally contrived to pick up an item of knowledge from each.—I was on my travels, and why should I not learn? But the wealthy man must farm to little purpose indeed, if his establishment be destitute of improvements, even in small things, from which the lesser lights of the profession can learn something useful. On these brief perambulations I have uniformly found the latch string of the door within sight and reach. Going in unheralded, and even anonymously, I have never been received discourteously. The house-dog may have been snappish, but the proprietor has been all suavity.

In common with my fellows of the plough and hoe, I have entertained my full share of curiosity hunters. There were those who had never seen a strawberry bed, and others who went off in raptures at the gorgeous sight of six acres of blackberries when in bloom. The mysteries of under-draining confounded one class, while they were fully appreciated by another. Some were accomplished horticulturists, who generously excused my short comings, while others were the merest literalists imaginable. One hot July afternoon, while waging savage warfare with a keen hoe among the weeds, in all the luxury of shirt sleeves and a timeworn straw hat, I was suddenly accosted by a gentlemanly stranger who had approached me unperceived, so wholly had my attention been devoted to the common enemy, the weeds.

"I was looking for the author of '*Ten Acres Enough*,'" said he.

"Not with a writ of ejectment, I hope," I responded, pausing in my work, and resting on my hoe, and adding, "he must be either you or I."

"Well," said he, "I bought the book in Philadelphia, walked my horse home that I might read it, got through all but a dozen pages, and have come here to see you."

This led to further colloquy, and a slow walk over the grounds. My visitor was the owner of a hundred acres not many miles from me, and professed but limited faith in what I had written. He had never

done the like himself, and considered it impossible for any one else to do so. Half suspecting that he came to corner me, I was not only circumspect, but voluble—he owned a hundred acres, and must therefore know a great deal more than myself. Of blackberries and strawberries he could learn nothing from me, as he had dipped largely into them. I showed him my peach trees, swabbed with tar at the butts, and pointed to the absence of weeds among the blackberries, which he did acknowledge to be cleaner than any he had seen. Just then my foreman drove by with the cart. I assured him that that was my thirty dollar horse, and that he had cost no more. He conceded that all these items were in the book.

As this cross examination was going on, I had raised my hoe with the blade upward. It was a half-round hoe, with sharp corners, made of thin steel. His eye caught sight of the blade, and coming close to it he exclaimed, "Why, I never saw a hoe sharpened from the inside."

"What!" said I, "the owner of a hundred acres not know how to sharpen his hoe?"

Then running his thumb across the edge, he drew it back quickly, exclaiming,

"Why, it's as sharp as a razor!"

"Yes," I replied, "I never work with a dull hoe," and drawing from my pocket a small flat file, poised it before his view, and enquired if that also was not in the book.

As there was no gainsaying these little matters, he enquired for my daughter Kate.

"Why," said I, "you know she is married and gone."

"But I did not know she had left you," he replied. "You did not tell us that."

So my visitor went the rounds. He was disappointed because every particular item of the narrative could not be realized on the spot. I labored to impress upon him that my object had been to show that a small farm, if thoroughly cultivated, would be certain to keep a family whose aspirations were moderate, and that while the main points were truly illustrated, the minor collaterals were of no practical value beyond making the dry facts of horticulture entertaining. But he could not see it—he was an uncompromising literalist—whatever was put in print should be literally so. Thus, as he came expecting to be disappointed, what wonder that he should go away heavy hearted?

BROAD LEAVED EVERGREENS.

BY H. W. S.

MESSRS. EDITORS,—Your old, and as I truly regard him, valued correspondent, G., in his article on Broad-leaved Evergreens, in your Nov. issue, asks anxiously why his *Rhododendron Catawbiense* should not flourish in Western New York, when R. Maximum seems to do so well in that vicinity. He appears to understand so thoroughly the making up and protecting his border, that it does seem somewhat difficult to answer his question, or discover where the fault or error lies.

A bed composed of one-third muck, one-third sand, and one-third common soil would seem all that is necessary; but if he had said one-third *peat*, one-third sand, and

one-third of equal parts of the well-rotted top sod of an old pasture, and exhausted hot-bed manure, I think he would have done better.

If by muck he means the heavy clay or swampy soil of some of our low lands about here, it is no wonder his *Catawbiense* do not flourish; but if he means the peaty, fibrous matter, which seems mostly composed of old rotted wood and roots, and decayed vegetable soils, then he is quite right.

If lime or chalk should enter into the composition of his "common soil," that would account for his bad luck, since lime is most repulsive to the *Rhododendron*.

My own experience has conclusively

proved to me that in order to insure perfect success, a heavy and permanent mulching of leaves the year through is essential.

My habit is, in November, to turn slightly under and into my Rhododendron beds the leaf mulching of the previous year, and to immediately again cover the beds and borders some six to eight inches thick with fresh leaves, which remains as mulch until the ensuing November, when the same process is repeated. The annual enriching the border thus gets, by the inturning of this decayed and decaying matter, seems to furnish sufficient food for the yearly progress of the plants, besides which the constant covering of six to eight inches of these moist, decaying leaves all summer keeps the roots in a cool equable temperature, promoting healthy foliage and well developed flower buds.

So necessary do I regard this perpetual mulching, that I would prefer a bed thus protected in the centre of an open lawn, exposed on all sides to sun and wind, than

the same bed, *not mulched*, on the north side of a wood or building.

Cutting back the roots of the screen on the south to prevent their depredation, is quite right, but after a number of years of this treatment, the amount of fibrous rootlets, produced by this annual pruning, is so large, and their absorbing qualities so improved, that the wear and tear of the border becomes very great. A very thorough way is to isolate the border entirely, by a wall, between the bed and the screen. Does G. know that the Rhododendron, beyond any other plant, in order to bloom regularly every year, requires the seed-vessels always to be removed? they can be easily broken off with the finger and thumb some two or three weeks after their bloom is passed.

There is nothing lately introduced so hardy and so valuable among the broad-leaved Evergreens as the three new mahonias—*Berberis Japonica*, *Berberis Bealii*, and *Berberis Intermedia*.

Wodenethe, 7th Nov., 1864.

GRAPES IN 1864.

BY A. S. FULLER, AUTHOR OF THE "GRAPE CULTURIST."

A RETROSPECTIVE view of the many delicious grapes we have enjoyed during the past year, naturally brings to mind many instances where long anticipated pleasure has ended only in disappointment. Seedlings that have received the care and attention of years have been closely watched as the blossoms set and ripened, and when tested, have proved worthless, and thus in an instant bursting the bubble of hopes and expectations that have "grown with their growth, and strengthened with their strength."

But the horticulturist should remember only enough of the shady side to keep his expectations in due limits, and to teach him that however it may be in some other things, with originators of new varieties of grapes, there is such a word as fail.

He will have cause to remember how he labored in planting that little *thready* vine and watched its first budding, tenderly tied that slender shoot, anxiously watching it for months lest some *thrip* or other vine lover should mar a leaf—and each year repeating this same care, until at last the vine produces the long looked-for cluster of fruit. Then at last, when ripe, if he finds it so hard or so acid that it is not eatable, he will be ready to exclaim, better than none are the pleasures of anticipation.

This is the dark side of Grape Culture, which I would forget if it were possible, but it is deeply engraved with many lines on the tablet of my memory.

As I look from my window I see a hundred vines which bring to mind precious time, labor and money, all of which are

gone, with no other result than to aid in filling the pages of experience. Yet here and there are vines to which no such unpleasant recollections are attached, for the fruit they bear are among the good things of earth, that we love to eat as well as praise. Towards these we cherish feelings akin to mortal love, and never pass them without wishing to aid them by proper pruning, training and feeding to increase the richness and abundance of their luscious productions. Though we may regret that each has some fault, for none of those we call the best are perfect, still they possess so many good qualities, we are inclined to pass lightly over their imperfections. In what shall follow, we purpose to speak briefly of some of the best and newest varieties, and to note their various peculiarities, as they have appeared to us the past season.

DELAWARE.

The Delaware still stands at the head of the list for quality, as we certainly have no other variety which possesses such a purely rich, vinous flavor, and is so perfectly devoid of all offensive qualities. Its only defects, if they be defects, are the smallness of its berries and slow growth of the vines. But these are both partially overcome by high cultivation.

IONA.

This I shall have to place second only to the Delaware in the list of good varieties, although it has not been generally disseminated, and its real character as to hardiness, and its exemption to disease has not been fully ascertained. But from a four years trial, I am inclined to place it thus high on the list. It reminds me of a fine Catawba, perfectly ripened in its native latitude, where its muskiness, which is its greatest defect, under northern cultivation, is imperceptible. It is similar to the Catawba in color and size, but ripens earlier. The vine is a strong, vigorous grower, and so far has been free from disease.

ISRAELLA.

The merits of this variety, so far as we

are at present able to judge, do not entitle it to rank third on the list of good grapes, but as it has been sent out by its originator, in connection with, and as a kind of companion to the Iona, I have placed it in the same position here.

It seems to possess some of that fickleness of character which belongs to its parent, the Isabella, sometimes very good, and in other seasons or localities far from satisfying to one who is familiar with the best varieties.

ADIRONDAC.

Fruit from the original vine still holds its own in good qualities, but few if any of the vines that have been sent out, have produced sufficient fruit to enable us to judge how good it will prove in other locations.

My own vines have not shown as much vigor as I could wish. They have also shown considerable mildew, but it may be owing to the season or to other causes that may be eventually overcome.

CONCORD.

It is said that the Concord is the Grape for the million, and without doubt the assertion is true, for the million or masses do not taste a fruit analytically, and should there be a slight foxiness about a grape they would not object to it, but many seem to consider it a merit. The Concord certainly possesses many good qualities and few bad ones. Its rapid growth, great productiveness and hardiness, large bunches and beautiful appearance, will always make it a favorite with those who are not very particular as to flavor, and prefer quantity to quality.

ROGER'S HYBRIDS.

Those known as No. 4, 15, and 19, have seemed to take the lead, but I have not been able to see anything remarkable about them, they are only passably good. No. 19 is too decidedly foxy to rank even with the Hartford or Concord. No. 4 is the best of the three, being quite sweet and early. But No. 3, in my judgment, is decidedly the best of all. It ripens the first of Septem-

ber, color light red, bunches quite large and uniform, flavor vinous and good.

RENSSELAER.

A new and beautiful variety, of medium size, dark colored, from Rensselaer Co., N.Y., that gives promise of being a first rate table grape, as it is very tender, with a rich and agreeable flavor.

FANCHER.

From the specimens received in 1863, from the original vine, I concluded it was the Catawba or very like it, but the past season, specimens sent me were far superior to those received in former years, and really distinct therefrom, being considerably smaller, much earlier and better flavored than any Catawbas I have ever seen that were ripened so far north. The Fancher promises to be a valuable grape.

ALLEN'S HYBRID.

This is probably the best of the light colored varieties, but it possesses so much of the Chasselas character, that it requires a very warm, protected location to ensure its ripening. In most locations the vine should be covered in winter.

ANNA.

We have never yet seen a specimen of this variety that was sufficiently ripened to be soft. It is possible it would do well in a country where September lasted till January.

CUYAHOGA.

A green variety, too late and too poor to be of value here, not equal to Allen's Hybrid or Rebecca. Even a passable variety of green or what is usually called white grape is a great desideratum, and he who will produce it will confer a great favor upon the country, as well as ensure himself a fortune.

DIANA.

Excellent in some localities, miserable in others, and of uncertain ripening everywhere.

CREVELING.

Early, medium quality; bunches loose, and not attractive in appearance.

We have spoken of these varieties only as they have shown themselves to us. In other localities and with different treatment they may have appeared to others as better or worse than we have judged them.

There is certainly nothing now under cultivation so near perfection as to deter any one from making further attempts to improve the grape, whether it be by seedlings, hybridization, or crossing the varieties.

Every one, whether gardener or amateur, should not fail to give this matter attention, not only for their own gratification and prospective profit, but for the public benefit.

BOB-O-LINK, OR RICE BIRD.

SOME Naturalist has described a bird of very singular habits that is found in Cuba. It was said to be confined in the olden time to that Island, but since the introduction and cultivation of rice in our Southern States, the female has found the way to the continent, where she is known by the name of *Rice Bird*, always leaving the male behind and making these excursions alone. This circumstance has been cited as a remarkable instance of a change of character, and one which has taken place almost in our own times.

Now, who would suppose that this wonderful bird is that enlivener of our fields and meadows called "*Bob-o-linkon*?" yet it is no other than Bob himself escaped from *the limits*. Dressed in a particolored coat, with a voice of many modulations, and a heart overflowing with gladness, he sings whether perched on the fence, stump, or a tree; but his vivacity seems greatest when he rises on the wing, and shoots himself along, seemingly indifferent to his course, and only intent on his song.

The mystery which enveloped this bird,

so long impenetrable to our older ornithologists, was at length dispelled by the perseverance and sagacity of Wilson. Bob, says Wilson, only wears his fine coat during the amorous season; and then so much like the female as completely to escape detection in that disguise.

During his stay in this district, says Wilson, he behaves well, appears to feed exclusively on insects, and is entitled to the regard and protection of the farmers; but after he turns traveler, and visits other lands, we hear a bad report of his conduct. As soon as the young are able to fly, continues Wilson, they collect together in great numbers and pour down on the oat-fields like a torrent, depriving the proprietors of a good tithe of their harvest; but in return often supply his table with a delicious dish. About the middle of August they visit Pennsylvania near Philadelphia, on their route to Winter quarters. For several days they seem to confine themselves to the fields and uplands; but as soon as the seeds of the *wild* rice are ripe they resort to the shores of the Delaware and Schuylkill in multitudes; and in these places during the remainder of their stay appear to be grain devourers. The seeds of wild oats, furnish them with such abundance of nutritious food that in a short time they become extremely fat; and are supposed by some of our epicures to be equal to the famous Ortolon of Europe.

About this season the markets of Philadelphia exhibits proofs of the prodigious havoc made among them, for almost every stall is ornamented with strings of these

birds. Early in October they appear in the Island of Cuba in immense numbers in search of the same delicious grain. About the middle of October they visit Jamaica where they are called *Butter Birds*.

Now, hear what the late Washington Irving says: "As the year advances, as the clover blossoms disappear, and the Spring fades into Summer, he, the Bob-o-link, gives up his elegant tastes and habits, doffs his poetical suit of black, assumes a russet dusky garb and sinks to the grass enjoyments of common birds. His notes no longer vibrate on the ear; he is stuffing himself with the seeds of the tall weeds on which he lately swung and chaunted so melodiously. He has become a *bon vivant*, a gourmand; with him now there is nothing like the joys of the table. In a little while he grows tired of plain, homely fare, and is off on a gastronomical tour in quest of foreign luxuries. We next hear of him banqueting among the reeds of the Delaware, and grows corpulent with good feeding. He has changed his name in traveling: Bobolincon no more—he is the Reed-bird now, the much sought for tid-bit of Pennsylvania epicures, the rival in the unlucky fame of the Ortolon! Wherever he goes, pop! pop! every rusty fire-lock in the country is blazing away. He sees his companions falling by thousands around him.

Last stage of his career: behold him spitted with dozens of his corpulent comrades, and served up a vaunted dish on the table of some southern gastronomer.

THE ADIRONDAC GRAPE.

BY GEO. H. MARTIN, NORWICH, CONN.

I HAVE been a careful reader of your valuable journal for several years, and have been very much interested in all articles touching the grape question, and particularly so in the discussions about the Adirondac grape; and as my experience differs so widely from statements made by one of your correspondents, Mr. F. C. Brehm, concerning this grape, I feel disposed to make it public. In the first place I would say that I have fruited the Delaware, Diana, Concord, Creveling, Roger's Hybrid Nos. 3, 4, 15, and 19. Allen's Hybrid, Rebecca, Union Village, Anna, Cuyahoga,

Golden Clinton, and Lincoln, and have had the pleasure of tasting the Iona and Brackett's seedling for two seasons past.

Now, in regard to the Adirondac grape, I received from Mr. J. W. Bailey a small one year old vine in the spring of 1862. I planted it with the same care that I do all the kinds I deem worthy of trial, and no more. It grew that season eight or nine feet, and ripened its wood to the top. I cut it down to four buds in the fall, and covered it with leaves for the winter. The next spring I found it fresh and lively, all ready for another race with its sisters beside it. As fruit buds appeared, I allowed three bunches to remain, and they were fully ripe by the 16th of Sept. I let three canes grow—two for arms, the other for layers; the two main canes grew nine feet each, the third cane five feet. In November I cut them back to five feet, laid them down and covered them for winter. I protect most all my vines in the winter, and I think it pays well for the trouble. When I uncovered them this spring the Adirondac was as green and fresh as any of the varieties I have. Every bud pushed, and in some cases double buds appeared. It blossomed with the Delaware; the fruit set well, and began to color, August 1st; was in first rate eating order September 1st, and was *fully ripe by the 10th*.

In regard to its mildewing, I can truly say that the first two years it was perfectly free from it.

This year it mildewed a very little, but not enough to injure or retard the ripening of fruit or wood, as you will observe by the time previously stated when the fruit was

ripe. And I will further state that the Delaware, Allen's Hybrid, and even the Concord mildewed more this year than the Adirondac.

Nevertheless, I have not discarded them, but consider the first two varieties named among the very best. I have, as yet, said nothing about the quality of the Adirondac grape, and I am fully aware judges differ as to what constitutes a grape of the first quality; therefore, I think it very unwise, and a little egotistical to make the sweeping assertion that the Adirondac grape "is neither hardy, healthy, very early, or first quality," for I happen to think that it is *healthy, very early, and of first quality*; and probably seventy-five different persons have, this season, tested it, at my house, with the Delaware, Allen's Hybrid, Roger's Hybrid No. 15, Diana, Rebecca, Union Village, and other varieties, and *every one* pronounced the *Adirondac first quality*. I cannot speak so positively in regard to its hardiness, as I have covered it every winter, as stated before; yet I think it is as hardy, and would stand the winter as well as the Isabella. I would not detract one iota from any of the first quality grapes now before the public, but would welcome with joy such new-comers as the Iona and Israella, for in them and Adirondac I find a sweet, tender, melting, and vinous pulp, qualities certainly very desirable. I wish only success to those who have done so much in disseminating such choice varieties, for by so doing many a vine has been planted, where weary pilgrims may rest beneath its cooling shade, and feast on its lucious fruit, as they journey homeward.

Nov. 7, 1864.

LIME AS A FERTILIZER.

BY B. AYCRIGG.

IN the neighborhood of New York some persons estimate a bushel of shell lime to be worth two or three of stone lime. A gentleman in Baltimore informs me that some in that neighborhood reverse this estimate. I

will repeat a part of my answer to him, as a supplement to the paper in the HORTICULTURIST, May, 1861—pages 206, 209—under the title, "Practical Theory of Fertility."

Limestones are of variable qualities. In

England they use limestones that contain much sand and but little lime, and fall to pieces when burned. I do not know that such are used in this country. Cement stone is a compound of lime and clay. Its geologocial position is at the junction of the limestone with ordinary roofing slate. I know that it is found at various points in the valley south of the Blue Mountain, and north of the Blue Ridge. A few years since, I saw large quantities that had been thrown away as useless "deads" that had covered the slate quarries at the Delaware Water Gap. They did not know what it was. I do not suppose that it is ever used for agricultural purposes, because its preparation is too expensive. It will run into glass if burned as hot as ordinary limestone. It will not fall into powder, but must be ground like grain in order to form hydraulic cement.

The same valley contains the grand deposit of secondary limestone throughout its whole extent. All the limestone that we use in this neighborhood comes from this valley on the Hudson River. Thence it extends through Orange Co., N. Y., and through Sussex and Warren Counties, N. J.; thence past Easton, Allentown, Reading, Lebanon, Carlisle, and Chambersburg, Pennsylvania, and Hagerstown, Md., and through the Shenandoah Valley, Virginia. It is the cause of the extreme fertility of the part of this valley where it is found. It is probably the same in composition throughout its whole extent. It has been analyzed for the proprietors of the Robisonia Furnaces, near Reading, Penn., and found to contain from 12 to 40 per cent. of magnesia. The quarry-men cannot distinguish the difference. It is used as flux in smelting iron ore. The furnaces sometimes get into difficulty from the unsuspected change in the quality of the stone that is above or below that which they have been using.

The neutralizing power of magnesia is 4.83, to pure lime, 3.50. The neutralizing power of lime with 40 per cent. of magnesia

is $40 \times 4.83 = 193.20$, and $60 \times 3.50 = 210.00$ makes total for $100 = 403.20$ against 100 shell lime $\times 3.50 = 350$. Therefore, lime made from the strongest of these limestones, is 15 per cent. stronger than an equal weight of lime made from shells or marble, when used to neutralize the soil. It has also an additional value when there is a deficiency of magnesia in the soil. On the other hand, an excess of pure lime will make the land permanently fertile, while an excess of magnesian lime will make it permanently barren, for the reasons stated, May, 1861.

I have no corrections to make in the principles then proposed as "Theory." There was no guess work. That short paper contains the condensed results from a careful study during four years. There is a large mass of evidence to sustain the positions then taken. But I then said: "The proper quantities of the various applications must evidently depend on the present condition of the soil. * * As a preliminary experiment I suggest * * one large application of pure lime in excess, to make an artificial limestone soil as a basis of operations—say 200 bushels slaked, struck for ordinary land." I now suppose this to be too little. A Pennsylvania farmer, who has the reputation of being most successful in a district that is not generally fertile, says emphatically, "I never use *less* than 200 bushels." I should not risk this quantity of *stone* lime without a previous experiment.

I said in May, 1861, "The reduction by chemical equivalents of a great number of analyses of soils, both good and bad, has proved to me that neutrality is the most distinguishing characteristic of a fertile soil." I did not then state that Johnston, in his agricultural chemistry, says that in England they have found that burning the soil of an old garden will restore fertility. In these cases, lime or ashes, or guano, in place of stable manure, would restore fertility by neutralizing the excess of vegetable acid in these muck heaps, and save this

valuable fertilizer, which they now burn up in order to produce neutrality, for that is the result.

A bushel of lime is a very indefinite measure. I had 6 loads of 10 barrels, or 25 bushels "round" measure of bulk lime, slaked in one heap. They formed 15 loads of the same size, or each load contained the substance of 10 bushels fresh, round measure. This body measured 28 bushels struck, and brought from one place 30, from another 36, and from a third 40½ bushels slaked, struck. A distinguished culturist estimates slaked, heaped. This

would make 22½ bushels. In parts of Pennsylvania they estimate in fresh, heaped measure, and would call this load 9 bushels. We have, thus, in this wagon-body 9, 10, 22½, 25, 28, 30, 36, and 40½ bushels according to different modes of calculating. Besides, the 25 bushels, when slaked, expended to two and a half loads. The nearest approximation to uniformity would be slaked and struck, although one man can put 40½ bushels in the same space that another fills with 30 bushels.

Passaic, N. J., Nov. 18, 1864.

GRAPE STATISTICS.

BY PRATIQUER.

SUPPOSING your readers to have passed the school-boy period, that they know how many square feet are in an acre, and that the number, whatever it may be, divided by that other number, represented by the distances apart of trees or vines, when multiplied into each other, will give the number of trees or vines to an acre. I will not trouble them with the calculation that I am called upon once a fortnight to make for my neighbor, Mr. Phogee, who for the past five years has entertained an idea of planting a vineyard. I shall endeavor to enlighten the said readers on some matters of which intelligent cultivators appear to be not fully informed.

My remarks apply to the latitude of Newburgh on the Hudson. Here grape vines throw out their first leaves about the 12th of May, the Clinton as early as the 10th, and the Catawba within six days afterwards.

The time of blossoming averages about 15th June; Hartford and Creveling are the earliest, and blossom from 7th to 10th; Isabella and Catawba about 18th; Concord and Rebecca about 20th.

The time of coloring is very irregular; but few grapes are ripe under thirty days

after they begin to color, and any grape that does not color before the 1st September may be regarded as a late ripener.

The time of ripening is from 5th September to 20th October; any one that will fully ripen, year after year, by the 25th September is worthy of cultivation, say within one hundred days after blossoming. This time varies from ninety to one hundred and twenty-two days. From coloring to ripeness requires from twenty-five to thirty-nine days, as shown in the following table

Allen's Hybrid.....	95—30
Catawba	102—30
Concord	96—29
Delaware.....	99—27
Hartford Prolific...	90—31
Le Noir.....	102—33
Perkins.....	102—29
To Kalon.....	101—28
York Madeira.....	100—29
Anna.. ..	122—38
Clinton.....	107—34
Creveling.....	95—25
Diana	108—39
Isabella.....	105—29
No. Muscadine.....	93—27
Rebecca.....	97—31
Union Village.....	113—32

If the flowering takes place on or before 15th June, and the ripening within one hundred days, they would be ready for use or market by 20th September, before the usual autumnal frosts in this region. Those which ripen early usually blossom early, such as Allen's, Creveling, Hartford, Delaware and N. Muscadine. The Concord and Rebecca are exceptions, yet they ripen about 15th September. The Miles is the earliest ripener with us, on 5th September, a grape which, at present, is but little known.

The new varieties, Adirondac, Iona and Israella, are yet to be tested, and unfortunately have not been shown ripe as early as was promised by interested parties. My remarks apply to the facts; your readers must draw their own inferences.

In marketing grapes, the size of boxes may be calculated by allowing one pound of grapes to occupy fifty-four cubic inches. A box twenty inches long, twelve wide, and five deep, inside, will contain twenty-two pounds, and may, by close packing, be made to hold twenty-five pounds. One twenty-four inches by fourteen, by eight in the clear, will hold fifty to fifty-five pounds. Not over fifty pounds of Concord should be packed in such a box; its liability to crack and damage the remainder is the reason. Isabellas, having tougher skins, may be crowded closer, especially if the bunches be loose. Compact or solid bunches are not the best for packing.

Putting up grapes for market requires care and skill. The box should be opened at the bottom, and the best layers be first put in on what becomes the top when opened for sale; if carefully arranged in layers of white paper, the boxes full, raised about an inch above the cover, so as to be firmly pressed down when it is nailed on, they will show handsomely and bring the highest price; so much for appearances.

STATISTICS OF WINE-MAKING.

Any grape that contains fifteen per cent. of grape sugar in the Must will make a good sound wine; none but well-ripened

grapes will yield this amount of grape sugar. This produces about seven and a half per cent. of alcohol, the quantity requisite for its preservation; such a wine, made with due care, needs no addition of cane sugar, and is indeed much better without it. It should not be fermented on the skins, which contain a large amount of tannic acid, imparting a disagreeable flavor to the wine, and this may be assigned as one reason why Isabella wine is usually so poor. Another reason is that it is made of unripe fruit, with water added, a weakness that cannot be overcome by the addition of sugar: hence the opinion that Isabella grapes will not make wine.

Grape sugar is now manufactured extensively in Germany from the starch of potatoes, for the purpose of making wine from fruit that has not the requisite quantity. Ripe Catawba yields 15 to 16 per cent., and is therefore eminently our best wine grape; Isabella yields 14 per cent.; Concord, 13 (and probably in Missouri, where it is said to make good wine, 15 or more); Hartford, 13. These may be made into light wines, which will keep in bottles in a cool cellar, but will not bear transportation or exposure to summer heat. Sugar in small quantities may be added and fermented with the Must as a preservative; one pound to the gallon will add eight per cent. to the Must, and is quite sufficient, leaving no sugary taste after fermentation.

But little is known by the ordinary wine-makers of the country of the chemical action in wine. If sugar is added to the Must, and thoroughly fermented as it should be, a proportional amount of alcohol is produced. Those who add the sugar are disappointed if the wine is not sweet, and so check the fermentation. A more economical way is to ferment the wine and then sweeten to the taste, if it is desired to make a cordial or conserve of it; one pound of sugar will thus do the service of three pounds.

Twelve pounds of sugar adds one gallon to the bulk. None but the best double

refined sugar should ever be used in wine-making, and pure rock candy is better still.

Refuse grapes are often used for making wine, but are unsuitable. Unripe grapes are still more objectionable, the sugar used is as good as thrown away.

Water added to the Must is an absolute abomination, no matter how thick the Must may be; it will work clear and be thin enough without water. Wine and water should be served in separate glasses.

Isabella grapes require 14 pounds to make one gallon *Must*; this Must, in evaporation and sediment, loses three-fourteenths its bulk, equal to 21 per cent.; it therefore takes eighteen pounds of Isabella grapes to make a gallon of *wine*.

The Catawba and Clinton, which I de-

nominate wine grapes, have much less sediment, and need no sugar.

To make a barrel of 30 gallons wine, fill a forty-gallon barrel with Must. With grapes at ten cents per pound, wine will cost two dollars per gallon when first made. Twelve pounds of Catawba berries, loose from the bunch, will make a gallon of Must, freed from skins and pulp, but it takes 15 pounds to make a gallon of clear wine.

Forty-five pounds of grapes, in bunches, make a bushel, and will yield about thirteen quarts of juice. Four hundred and ninety-four pounds of grapes yielded thirty-three gallons of Catawba wine, and a residuum of one hundred and sixty-six pounds of stems, skins and pulp.

One hundred pounds of Must measures forty-three quarts.

HORTICULTURAL SOCIETIES.

BY FARMER B.

HORTICULTURE, Messrs. Editors, is a Member of the family of "Agriculture," so we farmers consider it. At any rate, they are related like all the inhabitants of Smithtown, and quite as much of a "unit" as the Cabinet at Washington. When a brilliant Aerolite dashes across the heavens like a rocket of the skies, the very "congreve" of the wars of the gods, all eyes are turned toward its trail of fire, an unit, monstrously extended, filling all minds with wonder! But an explosion rends the air; the splendid meteor is torn asunder, flies off in fragments, and ends in showers of meteoric stones, which fall far distant! Is it an unit now, or more puzzling still, is each piece an unit? A hard question for political casuists, with which we have nothing to do, thanks to the blessings which flow from honest industry and hardy toil.

In order to learn all that we could by seeing what others had learned, and were learning, we have been traveling some among our border brother farmers, and as luck would have it, happened to attend

several meetings of our Horticultural Societies. There can be no doubt, Messrs. Editors, that these associations are actually productive of good; because, wherever they are in operation, a sort of new impulse is given to the minds of cultivators of the soil, and to those of other members of the community, more or less turned in the right direction. That is to inquiry, attention to facts, and of course to observation. If there are faults in the plan of any of them, experience may serve to correct them, for this, after all, is the chief school of wisdom. The idea of a ball—a dancing party—as a means of promoting Horticulture, seems to us a little out of joint—an odd notion—and yet we do not feel disposed to quarrel with it. The music at any rate was quite musical, and so, we doubt not did our town cousins consider the dancing. To give your readers an idea of it, the garden was all lighted up like the grove of woods at a camp-meeting time, all full of bustle, people everywhere, and all in great haste!

We doubt if we country folks could learn

anything about horticulture at such a place, and yet, do we not insist upon it, that horticulture and agriculture are nearly related, though we could not discover any thing that looked like it at the great ball. The prices paid for everything there, soon satisfied us that there were "whistles" in this world besides Dr. Franklin's, and began to raise doubts in our mind, whether they were all gardeners that attended there.

At the next horticultural exhibition that we attended, instead of a *ball*, they had a *dinner* "served up" at about our tea-time, just before dark! This puzzled us to find out why they should call this a dinner, till we saw that it was evidently intended for the principal meal of the day, and perhaps had been delayed waiting for the gardeners to get through with their day's work. It was a sumptuous feast with abundance of very fine fruit, besides all the eatables and drinkables that could be desired to keep from enjoying good health. If gardeners live at this rate, they must have strong constitutions! The anniversary, however, comes round but once a year; and perhaps at other times they dine when the work of the day is but half done, as we farmers do. Eating, at any rate, calls for food; and so, for aught we know, does fiddling and dancing; but it puzzles us to see how these feasts and balls form any part of agriculture! There are mysteries, it would seem, in all matters, and so there may be in this, and quite beyond our comprehension! There was an old school-mate of ours there, a member, as he told us, who had come several miles to bring a small wagon load of the produce of his garden to the "exhibition," worth at home five or six dollars, all which would become the property of the society; and he stood a chance, like a purchaser of a lottery ticket, to get a premium of one or two dollars. The ticket for his dinner cost him—let us reckon up—the price of four bushels of potatoes, turnips, or oats; two bushels rye or corn; two bushels barley; and as much as the selling price of five or six hundred pounds of hay, quite a little "jag," as

we call it. Even if sober, he would hardly ride home that night, and so we may reckon the expense of one night in town, himself and horse, with at least one day's loss of time, and then foot up the account of profit and loss; with our arithmetic, we cannot discover how *he* is to make anything by this kind of Horticulture! We farmers could not, suppose the name changed, if necessary to an Agricultural exhibition. There would be loss to fall somewhere, and no great mystery where, surely. As to the profit, some of which there must be, with so much loss, we suppose that all takes a direction for the public good and that these suggestions can therefore give no possible offence. We should all have some patriotism, and be willing to participate in its burdens, so as to make them fall as equally as possible. With this view, we would most respectfully suggest to our cousin Horticulturists to bestow a little more thought upon a reconsideration of some features of their plan of operations. If they do not, we would propose it to the gardeners.

In sober earnestness, it appears to us, Messrs. Editors, that this plan of operation asks too much of our *first* cousins, the real sweat-of-the-face-men, for the gratification, to say nothing of the benefit of our *second* cousins, the Horticulturists, or even for Horticulture, and the public good. The burden falls unequally. Gentlemen fond of the display and the name, may amuse themselves with Horticulture, and set an example in doing it, but they should be careful to bear a due proportion, according to their means, of all the labor and the expense, this is not done now, and the effect is felt among the real gardeners, who keep aloof or co-operate reluctantly. To their good sense, to their patriotism, the managers of these societies may well appeal, but it must be in a way compatible with fair impartiality and strict justice. The farmers would then come in, as co-operators with all the members of the family united in a common effort for the common good. Those who toil at the oars must not be required to pay the

tolls, lest those who would ride, may have to stay at home, or pull away themselves. To go pleasantly we must all be co-operators: operators each in his own way. Social efforts conducted on such principles, would be pleasing to all parties possessed of one grain of patriotism, fruitful sources of public benefit and of immense power in giving a high tone of action to the public mind. We should then see, and the whole country would see, that farming and gardening are kindred occupations, and Agriculture and Horticulture are of one family, as are all the actual cultivators of the soil. To make them a unit, requires only united effort, concert in action with no intervening disturbing force, to speak in the language of philosophy.

We have thus, we think, certainly with feelings of the most perfect good will to all parties, indicated some faults which require correction, in doing which, we have also seen much to commend; and probably an-

ticipate fully as much good from Horticultural Associations, properly conducted, as any reasonable man. If experience confer any claims to respectful attention, Farmer B. may plead some of this, both as a practical farmer and gardener, and as an acting member and officer of several Agricultural and Horticultural Associations. We ask no undue deference for our opinions, but they may be naturally considered, and rejected or approved, as shall be found best, in the direction of every friend to his country and of its sources of prosperity and happiness. Considering every garden as a sort of miniature farm, and gardening, model farming, we would therefore studiously encourage horticulture, both for the elegant usefulness of its productions, and as a school of Agriculture. A farm without a garden, particularly where youth are in training for farming, is like a house without apartments or a farm without fences.

Dutchess County, 1864.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

THIS number begins the twentieth annual volume of the HORTICULTURIST, and under more favorable auspices, perhaps, than any other volume has opened with, and this too in the face of high and advancing prices in all classes of material and labor. A determination on the part of the proprietors to advance its character and ability to the highest standard, to have the best talent in the land among its writers, to make it thoroughly practical, instructive, and reliable in all its departments, has met with the most flattering response from our readers. We therefore commence the New Year and the New Volume with a finer quality of paper, a superior typographical appearance, and an array of contributors of

the best practical talent. This standard will be maintained throughout the volume, our circulation has steadily and handsomely increased during the last six months, and our edition for 1865 will be double that of 1864, and far in advance of any volume issued during the twenty years the HORTICULTURIST has been before the public.

BINDING.—We are now ready to exchange bound volumes of 1864, for the numbers of that year, if in good order, on the payment of 75 cents. Cases or Covers uniformly stamped for any year, will be forwarded, post paid, on receipt of forty cents each. Periodicals of all kinds bound in any required style.

CLUB RATES TO BE DISCONTINUED.—On and after the First day of February, 1865, all Club rates to this Magazine will be suspended. The uniform price to all will be TWO DOLLARS PER ANNUM. We mean to make the HORTICULTURIST for 1865, worth at least two dollars to every one who reads it, the same amount of matter could not be procured in book form for less than five dollars.

NOTICE TO ADVERTISERS.—The rates for advertising in the Horticulturist for 1865, will be fifteen cents per line of Nonpareil type in column, for each and every insertion, each column contains 100 lines of space and the charge per column will be \$15, and per page, \$30 each insertion. The advertising pages will hereafter be printed on fine heavy paper, and the execution of the press work equal to that in the body of the book. The percentage of increase in our subscription list is larger than the advance we make in the advertising rates, our charges per page for advertising are now and always have been considerably higher than those charged by Hovey's Magazine or the Gardeners Monthly.

MESSRS. EDITORS—How many questions in the Nursery business want elucidating to get at *facts* and establish results?

For instance, it is a mooted point whether roots packed dry or wet will endure freezing in packages with most impunity. I find as many holding the one opinion as the other.

A brother Nurseryman speaks of a curious fact in his experience. It is that apple roots exposed a few days to the air in a way not to kill them—say in rather moist weather—will, after that, bear any amount of freezing and thawing with comparative impunity.

He says the roots become measurably like the branches, and yet do not lose their power to throw out new roots. If this be a fact, it could certainly be made useful as a mode of preparing roots for safe winter transportation.

When shall we have State or National

Horticultural Institutes for the purpose of testing varieties and modes of treatment?

F. K. PHENIX.

Bloomington, Ill., Nov. 26, 1864.

Will some of our readers who have had experience in this line please give us results?—(Ed.)

Buffalo, Dec., 1864.

Of late a new impulse has been given to the cultivation of the grape in this part of the State. The Isabella and Catawba are now mostly discarded as ripening too late for our ordinary seasons. This year, for the first time in many years, in some localities, they have ripened perfectly.

The Delaware, Hartford Prolific and Concord, all prove very fine, and succeed well. For our careless, heedless cultivators, the two last named are perhaps the best; for they will succeed well, even when quite neglected. The Delaware requires more care and a richer soil. It is perfectly hardy and prolific, and when well established, even producing large crops of the most choice fruit. The fact is, the Delaware and other new sorts have often been grown from very feeble and worthless wood, which has rendered the plants quite worthless. Many such plants have remained stationary for two or three years.

The Creveling ripens early, and is of fine flavor, and withal, grows finely; but its open, straggling bunches, I fear, will damage it as a market grape. The Adirondac, Iona and Israella comes to us so highly recommended that we have great confidence in them.

David Thomas, the late celebrated Horticulturist, &c., said the grape never mildews when running over a living tree. Such is the fact. An Isabella grape-vine has mildewed badly for several years. Two years ago I trained the vine over a plum and also a pear tree that stood near. The fruit on that part that runs over the trees is all free from mildew, and truly fine, whilst on some of the lower branches the fruit is worthless.

B. H.

Middlebury, Vt., Sept. 30, 1864.

MESSRS. WOODWARD,—

I send you the specific gravities of freshly expressed grape juice, all fully ripe, except Isabella. Such tables are desirable in determining the value of grapes for wine.

Delaware...1104	Adirondac....1080
Lyman....1084	Concord....1076
Weeks1060	Isabella.....1056
Water being.....1000	

Yours truly,

H. A. SHELDON.

Fox Creek P. O., St. Louis Co., Mo., }
3rd December, 1864. }

MESSRS. EDITORS: .

Sirs,—The following officers were elected at the annual meeting of the Meramec Horticultural Society, held on the 1st December, 1864:

President, Wm. Harris, Allenton; Vice Presidents, L. D. Votaw, Eureka, Jas. L. Bell, Eureka; Recording Secretary and Treasurer, Wm. Muir, Fox Creek, P. O.; Corresponding Secretary and Librarian, T. R. Allen, Allenton; Executive Committee, Dr. J. B. H. Beale, P. M. Brown, and L. D. Votaw, Eureka; Fruit Committee, Dr. J. B. H. Beale, Wm. T. Essex, T. R. Allen; Flower Committee, A. Fendler, Jas. Cornwell, John Letcher; Vegetable Committee, L. D. Votaw, R. A. Lewis, B. F. Jacobs, all of St. Louis Co.

I am sir,

Yours, most respectfully,

WILLIAM MUIR.

OHIO SORGO ASSOCIATION.—The regular Annual Convention of the Ohio Sorgo Association, will be held in Columbus, O., at Gill's Agricultural Hall, on Tuesday, January 3, 1865, commencing at 10 A. M. The attendance of all interested in the Northern Cane Enterprise is earnestly solicited.

Committees will be appointed to examine and report upon sirup, sugar, and any other products of the cane that may be presented.

Members of the Board are requested

to meet at the Neil House in Columbus, on Monday evening, January 2d, 1865.

WM. CLOUGH, President.

JOHN L. GILL, Jr., Sec'y.

FIRE IN BEDROOMS.—Most people, even many intelligent reformers, have the idea that to sleep in a cold room is good—essential to health. It is an error. It is better to have an open fire in your bed-room. The atmosphere is not only by this means constantly changed, but with the fire you will keep the window open, which will add greatly to the needed ventilation. But more than this, with the fire you will have fewer bedclothes over you, which is a gain, as a large number of blankets not only interfere somewhat with the circulation and respiration, but prevents the escape of those gases which the skin is constantly emitting. Even furnace or stove heat with an open window, is better than a close, cold room. Interchange with the external atmosphere depends upon the difference between the temperature of the air within and that without. But let us have the open fire. Let us go without silks, broadcloths, carpets, and finery of all kinds, if necessary, that we may have this beautiful purifier and diffuser of joy in all our houses. In my own house I have ten open grates, and find with coal at eleven dollars the expense is frightful, and if it were in any other department of housekeeping I should feel I could not afford it; but in this I do not flinch, so important do I deem the open fire.—*Dr. Lewis.*

THE CLINTON GRAPE.—Prof. NORTH, of Hamilton College, in an Agricultural Address, gave the following account of the origin of this grape, which is placed on record for reference:—The "Clinton Grape," described in our standard fruit books with no account of its history, was so named from our village, and originated in the horticultural amusement of a student of Hamilton College. The original Clinton grape vine is growing over a tall elm on the east side of Dr. CURTIS's house, on College Hill. It was planted there in 1821, 43 years ago, by

HUGH WHITE, of Cohoes, then a Junior in College. Having a fondness for gardening and tree culture, he planted a quantity of grape seed two years before, in his father's garden in Whitesboro. Out of the many hundreds that came up, Mr. WHITE selected one that looked more promising than the others, and planted it east of the house of Dr. NOYES, with whom he then boarded. This seedling vine proved to be a rampant grower, and wonderfully productive; with bunches long, compact, quite uniform, with berries small, a very dark purple when fully ripe; quite palatable early in September, yet improved in flavor by the frost. As a grape for making wines and jellies, the Clinton is quite a favorite in latitudes where the Catawba will not ripen. It has come to be a popular grape with the masses, who have no special objection to a little foxiness, when the vine is so thoroughly hardy, and the crops so unfailing and abundant. It is the glory of the Clinton grape that it takes care of itself, and asks no odds of any one. The more you let it alone, the more abundantly it bears.

BOOKS, &c., RECEIVED.

HOW TO GET A FARM, AND WHERE TO FIND IT.—A new work, by the author of "Ten Acres Enough." Just published by James Miller, 522 Broadway, N. Y. Price \$1.75.

When "Ten Acres Enough" was published, it was very generally criticized by the press, as an advertising medium for bringing into notice the new settlements and extensive tracts of unoccupied land in Southern New Jersey, the advertisement in the back of the book being apparently of more consequence than the name of a responsible New York publisher.

However, merit will make itself known. "Ten Acres Enough" is a book that more than one popular writer would be proud to have attributed to him. It is a plain, honest, straight-forward and gracefully written statement of actual facts in the successful culture of ten acres of land, lying between the all consuming and never satisfied mar-

kets of New York and Philadelphia. Ten acres of land "literally manured with brains," by one who has got the brains to do it. The book will wake up our old foggy farmers, and the man who puts the question now "will farming pay"? has got his answer.

HOW TO GET A FARM AND WHERE TO FIND IT, is a book that every one in search of a farm would find profitable to read, and those who are looking about for a permanent life-long pursuit, will find something that will set them thinking if they will read this in connection with "Ten Acres Enough."

Where to find a farm is very difficult advice to give, and more particularly as such advice would not be considered sound by those not occupying the localities referred to. No one is so poor in this country but he can some day acquire the title to a handsome farm, if he possesses the requisite energy and determination to earn it; without capital and without friends the possession of real estate is a possibility with every industrious man, and we are glad to see a work which gives such valuable information on this subject.

We should like to have seen more space given to the West, a section of country that we are very justly in favor of, although we own and cultivate a handsome farm in the State of New Jersey. Ten years spent on the broad rolling prairies of the West has only more fully confirmed us, that if farming was our exclusive business, we should push for the West on the first express train. Still a man who cannot make farming pay in almost any section of this fertile land can never make anything else pay. He must be one of that kind who do not take agricultural papers, and has no library of professional books; he belongs to that class of men constantly falling behind the current intelligence and enterprise of the age we live in.

OUR FARM OF FOUR ACRES.—James Miller, 522 Broadway, New York, has just published another edition of this popular little book, reprinted from the twelfth

London edition, and adapted to American readers, which gives, in a very readable and interesting form, the experience in cultivating four acres of land in the vicinity of London, and the money made by it. The authorship has been attributed to Miss Harriet Martineau. Price, handsomely bound, large type and heavy paper, \$1

THE TAILOR BOY, an interesting book for boys. It purports to be the boyhood of Andrew Johnson, and shows how, as a fatherless boy, without a chance for education, he rose from the grade of a tailor's apprentice, by his integrity and sound principles to his present high position. Published by J. E. Tilton & Co., Boston, and for sale by Messrs. Hurd & Houghton, No. 401 Broadway, N. Y.

THE LIFE BOAT, published by J. E. Tilton & Co., Boston, as its name denotes, is a Tale of the Sea and of Wreckers along the coast. It shows the value of the life boat, and gives account of perils and escapes which are full of adventure. Messrs. Hurd & Houghton, No. 401 Broadway, N. Y., are the New York agents for Messrs. Tilton & Co.'s publications.

THE HYGIENIC COOK BOOK, by Mrs. M. M. Jones. Published by Miller & Browning, 15 Laight St., New York. Price 30 cents. Contains many new receipts and suggestions, and teaches all the most wholesome manner of preparing food.

OUR FARM OF FOUR ACRES, and the Money we Made by It. Another edition of this work has been published by Orange Judd of the American Agriculturist, 41 Park Row, N. Y.; price, thirty cents in paper covers; sixty cents bound in cloth. One of the best evidences of the merit of this work is, that the regular standard demand has induced two of our New York publishers to put forth distinct editions. Those who have not read the work had better procure it, the time will be profitably spent in its perusal.

DORA DARLING, OR THE DAUGHTER OF THE REGIMENT, published by J. E. Tilton & Co., Boston, is a suitable book for the young, who will read it with good relish. It is a very pleasant story, and portrays a little heroine indeed; full of courage and resolution, yet graced with innocence and sweet womanly dignity. Pictet or Epictetus is an interesting personage, and a true negro. The other characters are equally well drawn. The whole tale is animated, and unflagging in its interest to the end.

AN ESSAY ON THE CULTURE OF THE GRAPE IN THE GREAT WEST, by Geo. Husmann, of Hermann, Missouri; price twenty-five cents. This little work covers nearly all requirements necessary in the cultivation of the native grape at the west, where, in many respects, some of our leading grapes develop distinct features. In the favored soil and climate of Missouri grape culture promises to become an interest of the first importance. Mr. Husmann was the pioneer of grape culture there, and enjoys the confidence and esteem of all who know him.

GENESSEE FARMER, published monthly, at Rochester, N. Y., by Joseph Harris, at One Dollar per annum. To one who desires to be thoroughly read up in every department of agriculture it is difficult to say which one of the different agricultural papers might be dispensed with. Here is one published in the famous valley of the Genessee, and ranks among the oldest of the agricultural press; conducted with ability and energy, it is a desirable paper in any home.

RURAL NEW YORKER, published weekly, at Rochester, New York, by D. D. T. Moore, Esq., at Three Dollars per annum. This paper gives full information on the Sheep and Wool interests of this country which department is under the charge of Hon. Henry S. Randall, well known as the author of several popular works on this subject. Agriculture and Horticulture

receive thorough attention, with liberal illustrations. One-half of the paper is devoted to farming and gardening interests, and one-half to family reading matter. It is a large sized sheet, and has long been a popular and desirable publication. It is conducted with energy and spirit and has a deservedly large circulation.

CALIFORNIA FARMER. From the shores of the Pacific, and from a state that is golden in more senses than one, we receive, weekly, one of the most enterprising sheets that is published. If there is anything calculated to make a *Horticulturist* uneasy it is to read the glowing accounts of fruit culture in California. It seems to be the Paradise of fruit-growers, and agriculturists. Grapes that we grow here with great care under glass, thrive better in the open air of California. Cattle and horses are pastured the year round, and the earth brings forth its increase with most astonishing results. Let us build the Pacific Railroad without delay; give us the broad guage palace parlor cars and a six day's trip across the continent, and we can visit California between the publication of our monthly numbers.

The *California Farmer* is published at San Francisco, at Five Dollars a year, and those who wish to keep up with progress on the Pacific shore should take it.

THE PRAIRIE FARMER, published at Chicago, by Emery & Co.; Weekly, quarto, 16 pages. Two dollars per annum. This paper is devoted to the farming interests of the West, and is among the oldest of the *Agricultural Journals* of the country. Farming on our Western Prairies is carried out on such an extensive scale, and by the use of machinery in almost every department, as to separate it from the usual farm routine practised in the narrow limits of fences, stumps, and stones, of some of our older States. The field of the *Prairie Farmer* is a broad one, and the agricultural interest it represents is progressive, wide awake and successful. This Journal is a desirable one for all who wish to be posted on the pro-

gress of a section of our country, destined to lead all others in its agricultural importance and wealth.

OHIO FARMER, published weekly, at Cleveland, Ohio, at two DOLLARS and FIFTY CENTS. S. D. Harris is the well-known agricultural editor, and he takes good care that his department is fully up to a high standard of merit. We doubt if there is another agricultural editor in the country so well informed about current events;—one day in Ohio, next among the grapes in Knox's vineyard, then among the sheep in Vermont, the nurseries of Rochester; posting himself on the wool-markets of New York, Boston and Philadelphia; wide awake on all subjects in his line, he stops at nothing; and neither expenses nor time frighten him when in pursuit of information for his readers. If the 40,000 farmers of Ohio and as many more outside of the State, would take the *Ohio Farmer*, they would benefit themselves vastly.

GREENVALE NURSERIES, Murray Street, Oswego, N. Y. Wholesale price list for Autumn, 1864. W. D. Strowger, General Agent, Oswego, N. Y.; Eben Mason, New York agent, No. 12, Barclay Street N. Y.

CATALOGUE OF THE HERMANN NURSERY, near Hermann, Missouri. The death of Mr. Manwaring by the hands of guerillas dissolves the partnership of Husmann & Manwaring, proprietors of this Nursery, the business of which will be continued by George Husmann. The catalogue is very full and complete, comprising every variety of stock found in extensive nurseries.

THE FIELD AND GARDEN VEGETABLES OF AMERICA, by Fearing Burr, Jr., is nearly ready. Messrs. J. E. Tilton & Co. write us that it will be a splendid work. More illustrations and more information than the former edition. The last edition was a work of great labor and merit; it is very far ahead in character and ability of any other work published on this subject.

THE HORTICULTURIST.

VOL. XX.....FEBRUARY, 1865.....NO. CCXXIV.

THE WEST.

COMPARATIVELY few of the citizens of the New England and Middle States have any adequate conception of the extensive agricultural resources, and the general capabilities in all directions of wealth and material prosperity, which belong to those States of the West that border on the great chain of Lakes, and are watered by the Mississippi and Ohio rivers.

There is no exaggeration in saying that among the best educated and most intelligent men of the East, who have never traveled through the Great West, there exists a deplorable ignorance of all facts concerning this region—geographical, statistical, agricultural and economical, and this ignorance is not unfrequently accompanied with a perverse incredulity of plain and unvarnished statements of rapid, yet substantial growth. It seems almost impossible to bring this class of mind to comprehend and appreciate their grand systems of internal improvements, the comparatively inexhaustible fertility of their soil, the facility with which it is brought under cultivation, and the manner in which machinery is employed, in place of manual labor, in planting, cultivating and harvesting.

If we go back twenty-five years we find the Prairie States an unoccupied paradise, and the sites of their present prosperous and rapidly-growing cities but just indicated. If we look at these States to day, we find them literally interlaced with railroads, settled by an industrious and enterprising class of men—for it is only the enterprising men that break away from the old hearthstones—their cities, their villages, their farms, their commerce, all indicating a growth and progress which, though unparalleled in rapidity, are substantial and permanent.

New York city adds to its population every thirty months, and buries every six years, a number equal to the present population of Chicago, yet Chicago has grown, in about twenty-five years, to a size which required more than one hundred and fifty years, from its first settlement, for New York to attain. And, at this moment, Chicago equals New York in the magnificent architectural construction and effects of some of its public and private edifices—some of its churches and commercial buildings. Cities like Chicago, Cincinnati, Louisville, St. Louis, Detroit, Cleveland,

Milwaukee, and others, in their wealth, the extent of their business, and their highly prosperous and progressive appearance, are certain indications of the wealth and resources of the country behind them—a country as yet very far from its full development, but advancing steadily and surely to a position little dreamed of by those who cultivate patches of sterile soil among the rocks of our Eastern hill-sides.

In an article of this character it is scarcely possible to do more than allude briefly to the resources and capabilities of the West. We do not propose to furnish an array of statistics on the subject. To do this adequately would require more space than we can spare. We can only deal in generalities, and furnish a few facts which cannot fail to interest our readers. It is obvious enough, then, that nature has been lavish of her gifts to the West, and that enterprise and industry find there ready and remunerative returns. In the few years since this region was first opened to our hardy frontier settlers, the course of trade and the statistics of commerce demonstrate how indispensable the products of the West are to our Eastern cities and to the inhabitants of Europe. Cut off the supplies of grain and beef which they send us, and the results would be immensely serious, both at home and abroad. New York would receive an immediate check to her prosperity. The consumer here cannot now be made to believe that the supply is at all adequate to the demand. He sees no evidence whatever, in quantity or price, to indicate an over-sufficiency. A glut of the provision market is an unlooked for boon. The products of the great agricultural West are either below the demand, or the lines of transportation very deficient. The wholesale prices of corn differ nearly a dollar per bushel between Chicago and New York markets. New York, that adds one hundred and fifty every day in the year to its permanent population, must be fed, and the West must do its share of the supply. Overstocking the market is an absurd apprehen-

sion. All efforts in this direction have resulted only in increasing the demand and consequently in enhancing the prices.

Twenty years ago a single cultivator of grapes monopolized the New York market, and received barely six cents per pound for his crop. To-day he has more than a thousand competitors, and he receives eighteen cents per pound for the old varieties, while others who supply superior kinds of native grapes, command from forty to fifty cents, and these values are but very slightly due to the change of currency, as prices had advanced nearly or quite to these figures before these changes occurred.

Twenty-five years ago, with only one or two short lines of railroad connecting the Eastern cities with the producing inland region, the prices of provisions in the New York Market were very low. There has been a regular and steady advance ever since, which the construction of a vast net work of railroads, into every producing portion of the country between the sea coast and the Mississippi, has not been able to check. The surplus products of whole States have been forwarded into our market without producing a sensation—on the contrary, the demand has increased every year, and the prices have steadily gone up, to the great astonishment and alarm of the consumer.

But the most egregious misconception regarding these things, and the interests and relations of the Great West, in the minds of untraveled and uninformed men, is the supposed want of a market for her affluent productions. Corn at a shilling a bushel undoubtedly pays better when used for fuel, than when transported to the Eastern market. But intelligent Western farmers are not slow in learning that one production can be converted into another with profit. Forage crops and grain pay a better profit, some years, in the form of beef, pork, mutton, wool, &c., while the small comparative capital required to work a western farm—the whole original cost of which is less than the annual cost of

manuring an eastern farm—is a compensation for transportation expenses.

When the large demand upon the East for sugar, preserved fruits, and other articles which can be produced there even better and cheaper than here, shall in some measure cease; when the home demand shall be abundantly supplied—for prices now in the West, for all descriptions of products are by no means moderate—then, if the markets of the world do not require the surplus of the Western States, we must of course extend to them all the sympathy that a country groaning under intestine wealth could desire. Brother farmers of the West, let us know when your sufferings commence!

To the importance of fruit growing, and other branches of horticulture, the West, and more particularly, the State of Illinois, is keenly alive. The Horticultural Society of that State is a thorough-going, energetic institution. Composed of the leading men of the State, it is doing a work that will yield valuable and permanent results. Practical information on this subject is becoming generally diffused, and now that the Pioneer has passed through the incipient stages of progress, the comforts and luxuries of life demand his attention, and under the stimulus of his generous and earnest enthusiasm, fruit culture will be advanced to one of the leading interests of the West.

The grape promises to become a very important addition to the wealth of the whole country, and the soil and climate of the West are admirably suited, as will

doubtless be found by judicious experiment, to some of our new leading varieties. We could cite numerous instances coming within our personal knowledge of successful and profitable results, even in what would be regarded as unfavorable sections of the West, and we predict that the time is rapidly coming when a vineyard on every farm will be considered of even greater importance than the orchard. The culture of the vine in our country is an interest well worthy of a much greater attention than it has, as yet received. There is an abundant and profitable harvest in this branch of culture awaiting the reaping.

Our main object in this article has been to call attention, in a general way, to the resources of the West; the almost universal fertility of the soil, the low price of land, and the great ease of cultivation, the great diversity of climate, from Southern Illinois and Missouri to Northern Minnesota; the general healthfulness of all the Western States, the rapid settlement and development of the country, by means of increasing lines of internal communication; the beauty, prosperity and activity of their cities; the intelligence and enterprise existing among all classes of Western men, and at the same time, the surprising ignorance on all matters relating to that region, among Eastern people. We shall have gained our object if we have succeeded in stimulating enquiry on these subjects among our readers.

TREES AND SHRUBS OF BEAUTY FOR A PLACE OF SMALL EXTENT

CLINTON, N. Y., Dec. 19th, 1864.

MESSRS. EDITORS:

Gentlemen:—We have in this place a society of gentlemen under the name of the "Clinton Rural Art Association" which has been in existence eight or nine years, during which time the Association has almost, without fail, held its regular monthly meetings with seemingly increasing interest to those connected with it. At these

meetings, which are held in catalogical order at the several residences of its members, some subject connected with rural art is discussed. One of its members opening the subject, and each one present being invited to take a part in the discussion of the subject of the evening. Another object constantly held in view is the planting of trees along our streets and highways.

For this purpose a committee is annually

appointed. One of the duties of this committee is to request persons to plant trees along the streets in front of their own land, where, for any reason this is not complied with, the Association plant the trees, paying the expense from a small fund raised among its members in each year. The working of this Association has been to promote a pleasant social intercourse among its members, a constant increase of fine shade trees around us, an increased interest in the subject of adorning our homes, and a diffusion of a large amount of information on various subjects connected with rural art. I enclose you an essay read by Prof. North of Hamilton College at one of its late meetings.

The subject of the evening being "TREES AND SHRUBS OF BEAUTY FOR A PLACE OF SMALL EXTENT."

When we speak of a shrub we think of something midway between an herb and a tree. A tree is perennial with a solitary trunk that grows large and tall. An herb is low growing with soft stems that die down to the root each autumn. The shrub in a bushy plant with many woody stems, seldom growing more than eight or ten feet high. Few things in the vegetable kingdom interest us more or are more worthy of our interest than shrubs. As we advance in years, or take up heavier burdens of daily care, we are apt to grow weary of the pretty coquetish annuals that cannot be weaned and are doomed to fall before the first frost in autumn, we prefer to plant shrubs that will remain in their places from year to year so that we form a sort of friendship with them as individuals and enjoy their companionship as each returning spring quickens them into fuller habit and a larger wealth of leaves and blossoms. Shrubs seem nearer to us—more tractable and more companionable than the stiff tall trees. We look up to the trees with gratitude for their shadows and fruit, and with a sort of reverence as something higher than we. The shrubs belong to our caste; we feel quite easy and at home in their society as we do when visiting cousins. In talking about

shrubs it will be a convenient arrangement to classify them according to their size, habit and uses. We shall find that some shrubs are suitable for the lawn and others for the border, some for hedges, and others for the wilderness or shrubbery.

Shrubs that are perfectly hardy so as to need no protection in winter and grow to be six or eight feet high are appropriated for the lawn.

It is melancholy to see how many disastrous mistakes are made in the planting of shrubs in a lawn. As the unwedded Celtic mother thought her sin could not be very great when her baby was such a little thing, so the planter often thinks it of no great consequence when he plants so small a thing as a shrub. Not realizing what the future is to bring forth he plants his shrub near to the walk or the drive, or between his parlor window and a fine waterview. But every year adds to the height and breadth of the shrub, and finally it crowds up the drive, tears veils and scratches faces in passing carriages, or shuts out some picture in the landscape that you value as much as you would a Cuyt or a Cole or a Bierstadt on canvass. Then you have it on hand to decide whether you will acknowledge your error by removing the impertinence or allow it to stand for the annoyance of yourself and others. A planter should be an artist with a prophets' vision looking far forward into the future and competent to produce something of present beauty that shall continue to grow in fullness and completeness as the years go by.

If an experienced planter were called upon to select the six shrubs most suitable for a lawn of moderate size, his task would be a little puzzling. There would be many candidates with claims not to be denied and hard to be resisted. Beyond a doubt the *Syringa Grandiflora* would be one of the elect six. This is the most showy of all the *Syringas*. It blooms two or three weeks later than the common variety, and the blossoms are very large but not fragrant.

The Upright Honeysuckle is entitled to a place in the smallest collection. Few

shrubs can be found with foliage, habit, and blossoms, more suitable for the lawn. It flowers profusely in the spring, and from midsummer to autumn is adorned with numerous crimson berries which the robins are fond of gathering. The Weigela Rosea is less common than the Honeysuckles, but equally beautiful and desirable for the lawn. This is one of the new plants that was sent to England from the north of China by Mr. Fortune about 20 years ago.

In describing the Weigela, poets would call it "lush and lusty." It is a gaudy, Dutch-built shrub, "buxom, blithe, and debonnaire." It has tubular flowers of a delicate rose color that hang in loose clusters at the end of each little side-branch. As a fourth on our list of shrubs for the lawn I would name the Smoke Plant or Fringe Tree—*Rhus Cotinus*. From July to October it is covered with purplish or brown seed plumes that render it uniquely beautiful. The French call it the Tree Perewig (*Arbre à Peruque*.) To me it looks more like a cloud dropt down from the evening sky with a faint tinge of sunset lingering about it.

The Lilacs should not be overlooked. All varieties of the Lilac are beautiful and some of them are comparatively rare. The white Lilac makes a taller growth than the other varieties, and a good effect is produced by budding upon this, the *Josikaea* and Persian Lilacs. The contrast between the white and purple blossoms growing on the same stems belong to what may be called sensation gardening. I have tried this trick and would commend it to others. M. Andre Leroy, of Angiers, France, grafts the Lilac on the common ash.

Thus treated it forms a handsome bushy head and flowers finely, and there is no annoyance from suckers. What shall we select for the sixth and last shrub? Shall it be the Barberry, with its graceful sheaf-like top and useful fruit? or the *Cornus Florida*, with its striking flowers and the rich tints of its autumnal foliage? or the Chinese Magnolia, so superbly elegant when planted near the house with a few evergreens to back it? or the double flowering pink Haw-

thorn, with blossoms that look like miniature roses? or the Burning Bush, with red berries that hang on till spring and give a cheerful look to the lawn in winter? or the Red Bud Judas Tree, to remind its master that he is liable to be betrayed even in the embellishments of a lawn? or the Crimson Dogwood, *Cornus Stolonifera*, with numerous shoots that turn deeply red towards the end of winter which time the reddening combs in the poultry yard show the coming of fresh eggs for Easter breakfasts? or the Buckthorn, that is equally true to its position as a common soldier in the hedge row or a staff officer on the lawn? or shall it be the English Alder, as a tribute to the home of Shakespeare? or the Bladder-nut, sure to be voted for by the Romanists who use its seeds for Rosaries? or the Hop Tree, *Ptelea Trifoliata* that would be voted for by housekeepers if they knew how much good leaven there is in its seed wings? The easier way to settle this question, will be to have a larger lawn and take in more shrubs.

There is another class of shrubs, smaller in size, and some of them half hardy, that belong to the cultivated border.

If carefully selected they will furnish a succession of blooms from April to October without the never ending care incident to the culture of annuals. The *Daphne Mezereum* is about the first plant that blossoms in spring. It is earlier than the Crocus, and its little pink flowers are highly ornamental. There is also an autumnal variety that should be found in a full collection. Soon after the Daphne, comes the Japan Quince that is brilliant, but not hardy, and as a shrub not altogether tractable. The Shad bush or June berry is densely enveloped with white blossoms in early May, the season of fresh shad, and is worthy of more attention than it has yet received from ornamental planters. Its purplish edible fruit is ripe in June and is the very earliest of all our berries that are fit for culinary uses. The Shad bush can be grafted on the apple or pear, but is more thrifty when grown from its own roots. The *Deutzia Gracilis* has no superior among all the shrubs of the

border. Its abundant spray is so fine and lithe that the white flowers are worked into bouquets as easily as annuals. It must be covered with turf in winter. The *Deutzia Scabra* should be discarded from all but the larger collections. It must be protected in winter and the stems are so brittle that they cannot be bent without breaking. The *Spiræas* are the John Smiths of the garden. As to merit they are good, bad and indifferent, and through their suckering propensities are so prolific and irrepressible that it will require some industry and nerve to keep them within reasonable limits.

The Missouri Currant, to which the hummingbird early resorts to obtain its sweets, is good to perfume the garden in May, and beside it should stand its crimson flowered sister.

The Indigo shrub will repay the care it costs, although it is tender and needs to be covered in winter.

The *Calycanthus* is equally remarkable for the dark brownish purple of its flowers and their pleasant pine apple fragrance. This shrub is not often met with because tender and difficult to be cultivated. The *Altheas* or shrub *Hollyhocks* bloom as late as September, when they are less highly prized because eclipsed by the more brilliant annuals.

Something ought to be said in behalf of the *Kalmias* and *Rhododendrons*, but as I have had little experience in the cultivation of these shrubs I leave the presentation of their claims to others. In speaking of shrubs placed in hedge rows one hardly knows where to begin. A hedge is a good thing—when you have a good hedge. The samples we meet with in our daily walks are apt to be defective or out of place, or made of unsuitable shrubs. What can be the motive for cumbering a lawn twenty feet square with a privet circle that is always in the way and half dead at that? We often see privet hedges in cemeteries that are dead and brown in patches and which ought not to be there even if they were hardy and green. We see *Osage Orange*

hedges beside the road always dead at the top, untrimmed, ferocious looking, while keeping a piratical watch over all sorts of weeds. Even *Hawthorn* hedges are a failure in this country. For a hedge to turn cattle we have nothing better than the *Buckthorn* and need nothing better. It is hardy, handsome, easily grown, easily managed, patient of the shears and long lived. Just now interested parties are stunning the public ear with appeals in behalf of the *Honey Locust*, or three thorned *Acacia* for a hedge plant. Nature intended the *Honey Locust* for a tree, and nature's intentions are not so easily defeated as some men seem to think.

The man who surrounds his fields with *Honey Locusts* in the expectation that they can be kept loyal to the humble condition of hedge plants, should retire from other cares and devote himself to the shears. For ornamental hedges that are not relied upon for turning cattle, there is quite a choice of suitable shrubs.

The *American Arbor Vitæ* and the *Hemlock* are most admirable for this purpose, and are deservedly gaining in the popular favor. The *Japan Quince* would make a brilliant flowering hedge were it not too tender for our latitude. The *Crab Apple* works into a hedge so gracefully, and is so easily raised from the seed, that we wonder it is not oftener used for this purpose.

The *Bush Honey Suckle* makes an ornamental screen and is raised from cuttings as easily as the *privet* and *currant*.

For an evergreen hedge the *Mahonia* is highly praised by those who have tried it. A recent writer, whose name I cannot now recall, says that the *Mahonia* is the greatest acquisition that the garden has received during the past quarter of a century.

Every garden of sufficient size should have a retired corner devoted to the wilderness or shrubbery. Here art resigns her sceptre and nature is allowed to play the romp. Here the refuse shrubs from the lawn and the border, the lame, the crooked, the irrepressible suckers, are planted thickly and without plan so as to produce a minia-

ture forest. Here hiding-places are furnished for the impudent cat-bird and the whip-poorwill. Here the privet protected by its fellow shrubs, will grow luxuriantly with an abundance of milk-white blossoms. Here the children will go to gather hazelnuts in October. Here we shall have a living illustration of Edens border.

"Where delicious Paradise,
Now nearer, crowns with her inclosure green,
As with a rural mound, the champagne head
Of a steep wilderness, whose hairy sides
With thicket over-grown, grotesque and wild,
Access denied; and overhead up grew
Insurpassable height of loftiest shade,
Cedar, and Pine, and Fir, and branching Palm,
A sylvan scene, and as the ranks ascend
Shade above shade, a woody theatre
Of stateliest view."

(Par. L. Lib. 4).

GRAPE CULTURE AT THE WEST—OUR LEADING VARIETIES.

BY GEORGE HUSMANN, HERMANN, MISSOURI.

As I think it may not be uninteresting to your readers to hear how we, in the midst of war, are getting along with grape culture, I take the liberty to send you a short report of our doings.

We are progressing, slowly it is true, on account of rebel raids, scarcity of help and a feeling of insecurity which prevails here in Missouri, but nevertheless steadily; and if our Eastern brethren will take into consideration that we must spend half of our time in scouting after guerillas and fighting the rebels, often at a time when it is very inconvenient to leave our vineyards and farms, they will not wonder that our progress is slow. But such are our natural advantages over you at the East, that we get, nevertheless, very fair returns; and if we do succeed, as we are determined we will, in making Missouri a free State, we look forward to a glorious future. Last winter about one hundred acres were planted in and around Hermann with vines, and as many more will be planted next spring. The last very destructive winter killed most of the fruit buds on the vines, yet the vineyards gave fair returns, and paid us fully for our labor, and the new wine is bringing a very good price. Catawba is selling now at \$2 50 per gallon and Norton's Virginia at \$5 00 per gallon, and our Concord, when any is to be had, readily brings from \$2 50 to \$3 00 per gallon. Norton's Virginia and Concord are a sure crop every year (except such excessively

cold seasons as the last,) and will pay at the rate of \$1000 to \$1500 per acre. If we take into consideration the vast area of lands adapted to grape growing in this State, and the trifling cost of it, it is surprising, indeed, that people will persist in planting grapes at the East when they can be grown at half the cost and so much better here. I refer, of course, to new beginners, those who are on the look-out for grape locations, who can buy the best of grape lands here at an average cost of from \$6 to \$10 per acre where they have to pay as many hundreds at the East. Besides, we have a much longer summer, consequently can make better wine than you can at the East, we can grow a greater variety of grapes, and the West must consequently become the great grape growing region.

OUR LEADING VARIETIES — NORTON'S VIRGINIA.

To make a dark red wine of the character of the best Port or Burgundy has long been the aim and object of our wine growers, and for this purpose this noble grape stands as yet without a rival. Add to this its adaptability to any soil, be it the rich alluvial bottoms of our rivers or the sterile southern slopes, its healthiness, hardiness and luxuriant growth, and we need not be surprised that the demand for the plants is far in advance of the supply. About 50,000 of the roots have been shipped from this place during the month of November, and the supply is nearly exhausted. It is

not as large a producer as some varieties, but it will, with fair culture, average 400 to 500 gallons per year per acre, which is much more than the Catawba will do, and the wine will find a much more ready market at double the price. It is truly invaluable, and as a medical wine our doctors cannot dispense with it any more, as a remedy for dysentery, summer complaint in children, etc. Its only drawback is that it is very difficult to propagate, as cuttings will not grow under common treatment.

THE CONCORD.

This is truly the "Grape for the Million," and if you take into account its many good qualities, its health, luxuriant growth, easy propagation, productiveness, early bearing, fine size and fair quality we cannot wonder at its being the universal favorite. Acres upon acres are planted every year, and it will soon completely supplant the Catawba here. As an example of its profitableness let me insert an account I have opened with a small piece, one-third of an acre :

COST.

1861. 400 small plants at 25 cents each.....	\$100 00
Preparing ground, planting and attendance	50 00
1862. Labor during summer.....	50 00
Making trellis.....	100 00
1863. Labor and attendance.....	75 00
1864. Labor and attendance.....	80 00
	<hr/>
	\$455 00

PRODUCT.

1861. 1300 summer layers at 13 cents each.....	\$169 00
2000 cuttings, \$12 per 1000.....	24 00
1862. 7000 layers at 10 cents.....	700 00
8000 cuttings, \$10 per 1000.....	80 00
1863. 2000 lbs. grapes, 16 cents, netted.....	320 00
30,000 cuttings, \$10 per 1000.....	300 00
1864. 2040 lbs. of grapes, 24 cents, netted.....	489 60
40,000 cuttings, \$10 per 1000.....	400 00
	<hr/>
	\$2,482 60

The product last summer would have been much greater had not the extreme cold of last winter destroyed a great many fruit buds, and I think that the same piece of vineyard will furnish at least 5000 lbs. of grapes the next season. I also planted the 30,000 cuttings made in 1863 myself, and grew from them 20,000 splendid plants which are worth now, at the lowest calcu-

lation, \$2,600. Deduct from this cost of cuttings, labor spent on them, etc., would leave \$2,100 for the plants, which could be added to the product, making it \$4,582 60 from a third of an acre during four years, and these being the first of course the product of fruit will be much greater the following seasons. You at the East, as I know from experience, do not know what a really good Concord grape is, such as we grow; but if you favor us with a visit at the next meeting of the American Pomological Society at St. Louis, we hope to show it to you and convince you on the spot.

THE HERBEMONT.

This is a truly glorious grape here where it fully ripens, and your acid Herbemonts at the East can no more be compared with our Herbemonts than a choke pear to the luscious Seckel. It is an enormous bearer, with close, compact bunches, berries nearly as large as your Catawbias, and truly its berries are delicious bags of wine. Had you seen my vines last fall bending under their load, 60 to 70 bunches each, many of the bunches weighing a pound and a half each; you would have thought it was well worth the little labor of covering every winter; which it also lately requires. It is a very strong, healthy grower, makes an excellent wine, which sells readily at \$3 00 per gallon, and plenty of it. In every respect desirable here, but rather particular as to soil and exposure, as a high, dry, somewhat stony soil suits it best, and it will not succeed in damp, rich soil.

THE DELAWARE.

This, I am sorry to say, does not succeed so generally here as at the East: it is subject in most locations to leaf blight. Some of our cultivators, however, succeed well with it, especially when grafted on other stocks. The best vine I know of in this neighborhood is grafted on a Norton's Virginia. It makes a fine wine, with little acidity, and good body. We have not given it up yet, but could not recommend it here for general cultivation.

THE CATAWBA.

For courtesy's sake I must mention this old staple variety, which would be an excellent wine grape were it not with us liable to so many diseases. It is consequently but little planted now, although the bulk of the old vineyards we have are of that variety. It will pay very well for the labor expended upon it, but when the Concord and Norton's Virginia will pay treble the amount, of course our vintners prefer planting that which is most profitable.

These are the varieties of which the most of our new vineyards are now planted, and which are fully tried. We have a great many others promising very well, but follow the principle that to decide on the full merits of any one variety it should at least be tried for a period of ten years. I will name a few of those which are very promising:

For red wine.—Clinton, Cynthiana, Arkansas, Devereaux, Alvey.

For white or light colored wine.—Cassady, Taylor, Louisiana, Rulander.

For sweet wine.—Cunningham.

For table and market.—Hartford Prolific (this is quite good here, and does not drop from the bunch,) Creveling, Union Village, Maxatawny, Clara, Diana, Logan, North America, Rogers' Hybrid No. 1.

I hope that your readers will bear in mind that I speak of grape culture out *here*, for I think the grape question principally one of locality. Should peace smile once more on our beloved country we hope to take many of them by the hand next fall and convince them by ocular demonstration that they are facts, not fiction, we are talking about

Hermann, Mo., Dec. 4, 1864.

A CHAPTER ON ORCHIDS.

BY ORCHIS.

THE plants included under the general name of Orchids are very generally distributed over the temperate and torrid zones. They are divided into two general classes, the terrestrial and epiphytal, or, in other words, those growing upon the ground and from it deriving their chief nourishment, and those growing upon trees or places removed from the ground and deriving their chief nourishment from the moisture of the air. This last characteristic is to be taken as a true type of the class, as many truly epiphytal orchids grow upon rocks near rapid water courses or cataracts, deriving their nourishment from the constant moisture, and though upon the earth only clinging to it for support, and having no more intimate relation with it.

In temperate zones we find only the terrestrial orchids; thus, in all North America (excepting Mexico and the states of Central America and the Isthmus,) while we find terrestrial species in abundance, we find

only one true epiphyte, a little Epidendrum (*E. conopseum*) which occurs in Florida on the *Magnolia glauca*. In the torrid zone, however, the epiphytal species grow in great luxuriance and in uncounted numbers, and the terrestrial, though often nearly allied to those of colder regions, assume a more richly marked foliage, and produce more gorgeous flowers.

The general order orchidaceæ owes its chief peculiarities to the following circumstances: *firstly*, to the consolidation of all the sexual organs into one common mass, called the column; *secondly*, to the suppression of all the anthers except one in the mass of the order, or two in *Cypripedeæ*; *thirdly*, to the peculiar condition of its pollen and the anthers which contain it; and, *fourthly*, to the very general development of one of the inner leaves of the perianth or petals in an excessive degree, or in an unusual form. In classifying this order, the most important characters appear to reside

in the pollen, which in many is consolidated into firm, waxy masses of a definite number in each species, and in others is either in its usual loose, powdery condition, or is collected in granules or small wedges, the number of which is far too great to be counted.

In a brief article like the present to condense a manual of orchid culture is of course impossible. It is only our intention to give a few general hints on the subject, and to present in a few words such useful directions as our readings and experience have supplied upon a culture which is beginning to attract the attention of amateurs in this country as it has so long done in Europe.

To grow orchids successfully they must have a house especially devoted to their culture. They cannot be grown successfully with other plants, though in a house built for orchids we may often grow many of the beautiful variegated plants which like them need a moist heat.

We, however, see in most greenhouses a few orchids. These are generally *Oncidia*, *Stanhopeas*, *Bletias*, or *Cypripedia*, which are the most hardy of the tribe; all the requisites for growth are wanting and they just live, leading for years a starved, miserable existence.

Before constructing our house we must look a little at the requisite temperature, and moisture, and the seasons of growth and rest of these plants in their native countries. Now, as orchids come from regions where the temperature seldom falls below 80°, and also from countries where the thermometer often goes below the freezing point at night, so that the foliage is not unfrequently covered with hoar-frost, it is evident that the different species require far different treatment. The culture suitable for the West Indian, the Mexican or Brazilian species is wholly unsuitable for the East Indian. It is therefore impossible to make one treatment suit all species, but by care many species coming from regions remote from each other may flourish in one house.

To grow them in greatest perfection three houses are necessary: the stove, the

intermediate house and the cold or resting house. These must each be kept at a different temperature, as will be shown hereafter. But, without the expense of three houses, orchids can be grown if we have only a stove and can devote a space in the greenhouse as a resting house, or the three houses may all be had by dividing a moderate sized house into three portions by partitions.

In general words the plants must have a treatment similar to that afforded by nature in their native haunts.

Now most of the orchids which we wish to grow and which are remarkable for gorgeous coloring or singular structure of their flowers are from hot countries. The greater part are epiphytal; some grow on the trunks of trees, some on the branches, some in the forks of the trunk and branches, some near the top of the tree in full sunlight, and others only in the most shady recesses of the forests.

Again, the mode of growth is different. Some are on the branches and send out erect spikes of bloom, others send out drooping spikes; some grow only on the under side of the branches.

Orchids are most capricious plants; the species are sparingly distributed; they are markedly local in their habits; of some varieties now in cultivation only a single plant has ever been discovered; some once in our stoves are now lost or represented only by dried specimens in herbaria, or botanical drawings or descriptions. Are we then to wonder at the seemingly exorbitant prices asked and obtained for fine specimens of rare species and varieties?

The habits of terrestrial orchids are no less marked than those of epiphytes. For years culturists failed to bloom *Disa grandiflora* (perhaps the most beautiful terrestrial orchid;) the most skilful gave up in despair; yet, at last, but a year or two since, the true mode of culture was discovered, which, in a word, was greenhouse culture, and now any one may have flowers of this beautiful plant. This same *Disa* is an instance of the local habits of orchids; it is only found in a

swampy place on Table Mountain at the Cape of Good Hope.

We may well despair at the possibility of adapting culture to each peculiar case. But we can approximate, and by giving plants what they most need we may obtain flowers which far surpass in formation, fragrance and color any of the productions of our temperate clime.

A point to remember in orchid culture is, that in tropical countries the days and nights being equal, the distribution of light and darkness is more even; also, that the light is more intense.

There is also a dry and wet season, during the former of which the plants are parched, during the latter saturated with moisture. The different altitudes and consequently different temperatures at which the different species grow must also not be forgotten.

The orchid house, then, to afford as much light as possible, should be of glass and span roofed; the ends may be of brick, as may also the front, though some prefer to have both of glass. In our severe climate we are led to think that brick is preferable, and in our more northern States a lean-to house may, for facility of warming, be better than a span roofed.

The house should be low in the angles, so that each plant may be near the glass. Let the house have an east and west aspect, that is, run north and south.

The reasons for this are that thus the light and heat of the sun are more equalized; in the cold mornings of early spring the sun sooner gives light and heat on the easterly side, and will be at noon in such a position that the beams will be slanting to the angle of the roof, while in the afternoon the duration of light and heat will be more considerable. Each plant will thus have its due share of light and heat. As the plants should (except some few species) be shaded from the direct rays of the sun, in a lean-to house with a southern exposure we must use some awning to keep the house in comparative shade; if we have a northern exposure we have too little light: in a span roofed

house while one side is in shadow the other is in full light. In the summer season it may be necessary to paint or wash the glass to protect both flowers and foliage from the burning rays of the sun; a light cream or straw color is best as productive of the most agreeable effect, and more conducive to the health of the plants.

There should be movable lights or sashes on the top of the house and also in the lower brick work at the front in order to secure ventilation. The air admitted from below should pass over the heated pipes or flues in order that it may become tempered, as cold drafts of air are very often fatal to orchids.

The arrangement of the interior must vary with various tastes.

There should always be a broad walk through the centre of the house, or, if the house is large enough, two walks around a central table.

The shelves of the stage (if a stage is used), or the table should be shallow troughs, about two inches deep. These should, if possible, be made of stone, brick, or slate, otherwise of the most durable wood, and made water tight: they are to be filled with sand, pebbles or gravel, *upon* which the pots should be placed. These shelves will retain the moisture, which is in summer indispensable to the health of the plants. A good substitute for stone is hydraulic cement, which may be used with small pebbles upon boards, is perfectly water-tight, and not expensive.

We have seen houses arranged with a large flat central table and narrower tables all round the sides; these are made about a foot deep, filled in with moss or sand, and into this the pots are plunged: the effect is very beautiful.

Shelves may be put up near the glass, but plants should always be kept a few inches from direct contact, lest they receive a chill in our cold winter nights, which is often quite as fatal as freezing. In our climate ice often forms very thickly upon the under surface of the glass in orchid houses: this, while beneficial by stopping up all in-

terstices in the glass and thereby retaining the heat, often proves injurious by the drip caused when it melts in the day, which falling on growing shoots not unfrequently caused them to damp off. To remedy this, little gutters of zinc or copper should run down each rafter so arranged as to carry off any drip.

Heating may be by numerous means ; hot water pipes or steam pipes in water tanks are the best, as then the necessary moisture can at all times be afforded, and during the resting season, when a moist heat is no longer required, by emptying the tanks a dry heat may be obtained. A common brick flue may be used with good success ; care must, however, be taken to prevent any escape of smoke or gas, which is most injurious to orchids and all stove plants. If, however, we heat otherwise than by hot water tanks, it will be essential to the health of the plants to afford constant moisture by the evaporation of water placed in large shallow zinc pans upon the flue or pipes. The water should be frequently changed in order that the moisture may always be pure and sweet. Sprinkling the

floor and shelves is also beneficial, especially in summer.

The habits of many orchids require them to be grown on blocks of wood or in baskets, which must be suspended from the roof of the house, that the plants may enjoy the full light. For this purpose, nails or hooks may be driven into the rafters, or strong rods may be carried across the rafters to which hooks shaped like the letter S may be suspended.

All metal hooks, nails, &c., used in an orchid house should be of copper or brass. Nothing of iron should be used : if unpainted the moisture immediately causes rust, the rusty water runs from the nails and discolors the paint ; the nails themselves soon rust out, are weakened, and the plants suspended to them are often irremediably damaged by the fall. If the iron is painted it does better, but the paint soon peels off : wire of galvanized iron is excellent, but not easily obtained. A screw is a better fastening than a nail ; brass hooked screws are useful for small plants

TO BE CONTINUED.

A NEW TURN TO FEMALE THOUGHT,

BY THE AUTHOR OF TEN ACRES ENOUGH.

MUCH is daily written of the necessity for enlarging the sphere of useful employment for women. It is seldom that their attention is directed to horticulture, to be prosecuted as a source of profit, though female taste runs naturally in the direction of fruits and flowers. The most successful parlor gardener will be found in some one of the ladies of the household. It is for them more especially that our garden walks are lined with flowers, our arbors clustered over with honeysuckles, our trees festooned with climbing roses, even our trellises overhung with grapes. We build greenhouses at the instigation of the softer sex. Their taste and care in these pursuits is every-

where visible around the homestead. This fondness for flowers, as well as for the flower garden, must be increasing among us. A single dealer in New York is reported to have sold in one season 50,000 carnation blossoms, 30,000 tuberoses, as many bouvardias, 40,000 camellias, 70,000 primroses, and other flowers in almost countless numbers. But foreigners exceed us. A French florist sells annually 90,000 pounds of rose leaves, 40,000 pounds of violet blossoms, 60,000 of jasmine and tuberoses, while his sales of mint, and thyme, and rosemary, amount to many tons. But hundreds of others are there engaged in the same occupation. Whole villages are enveloped in an

atmosphere of fragrance, and travelers who may be approaching them, inhale the perfume for miles before they reach the village itself.

The gathering of these vast amounts of flowers is performed principally by women, the cultivation of the soil being done by men. It has been stated in a recent publication that "already hundreds of acres of lavender and peppermint are being planted in America, and the product exported to Europe." Women are the harvesters of these crops also. There is in Pennsylvania a great plantation of the common sage, of which the annual crop is gathered and cured by females. These are eminently feminine employments, which women could attend to as thoroughly as men, if the plantation were once established for them. Mrs. Tutbill, of Staten Island, manufactured during the past season nearly a hundred gallons of blackberry brandy for the soldiers, and many other ladies, whose good deeds will never reach the press, showed themselves equally expert at similar occupations. One energetic widow in New Jersey is recorded as having been for years engaged in manufacturing preparations of wines and syrups from the common wild berries which the neighboring children brought to her, until she succeeded in clearing an encumbered farm of debt, and built up the business to a fixed commercial magnitude. All the great fruit canning and preserving establishments throughout our country, whether in the cities or in the fields, are carried on by the help of women. They perform the great bulk of the indoor work of these establishments. The men organise them, attend to the business details, the buying and selling, but the practical departments are filled almost exclusively by women.

Strictly speaking, these may not be either floral or horticultural employments. But they are so near akin to them as to be worthy of being considered indispensable adjuncts of both. It is probable that if female labor were not invoked to assist in conducting them, they could not have reached the high commercial value which

it is seen they have attained, while the market prices of their products would have been considerably greater. But they demonstrate the great fact that there is a natural aptitude in the female organization for all employments connected with the growth, the management, and the preservation of fruits and flowers. The problem is, how to enable them to exert this aptitude on a scale large enough to make the pursuit remunerative, as a distinct individual employment.

Some years ago an educated and wealthy lady, distinguished for the energy which she threw into all her undertakings, conceived the idea that the business of bee keeping could be made so profitable to women who needed some addition to their means of support, that she undertook the matter on a large scale. Her object was to show that the wives and daughters of cottagers, the widows and single women who obtained a precarious support by the needle or the washtub, might be taught the art of keeping bees and the production of honey, at scarcely any cost, while the income from a few hives would be sure to be an important affair with all of them. She could see no reason why the wife of a day laborer should not have twenty hives as well as one, and was quite sure that if she had the twenty, she would realise from them a large income. Unlike the universal cow of the cottager, or the ever hungry brood of chickens, the bees would provide their own food. She began by planting, at her own expense, whole acres of mignonette as bee pasture. She put other acres in red clover, and others in buckwheat. There was thus no difficulty in providing abundant range of pasture. She had many hives, to prove to those whom she expected to make converts to her theory that bee keeping on a large scale could be made profitable, and had men to look after and manage them. But for some reasons not now distinctly remembered, her patriotic enterprise proved a failure. Her hired men knew no more of bee keeping than she did herself; and then the world had not, at that early day, been

avored with the crowd of improved hives which annually swarm out from the Patent Office, some of them so perfect that they ostentatiously profess an ability to produce better honey, and more of it, than the bees themselves. She was evidently in advance of the age.

But it would be unwise to assume that because a great enterprise breaks down in the hands of one man, it must be expected to fail in those of his successor, as all our industrial experience rises up in contradiction. Twenty years practice in the art of bee keeping in this country has added immensely to the general stock of knowledge on the subject, and placed it, so to speak, among the exact sciences. It therefore becomes a question whether that point of simplification has not been reached, which will enable careful and energetic women to become successful apiarians, even to the extent of enabling them to live by such employment. There are potent reasons, growing out of the events of the war, for inviting attention to the subject. That contest has cut off our home supply of sweets, while a war tariff has so sent up the price of all that comes in from abroad, that every devotee of even sugar plums and candy is feelingly alive to its enormity. Far more calamitous than this, our country homes contain the desolate widows and orphans of brave men who have fallen in battle, while others are occupied by the maimed or otherwise shattered survivors. Hard work was always impossible to the widows and children, but now it has become equally so for these crippled heroes. The bee culture opens for all these a wider door for emolument than the transient reader may imagine.

There has recently been published an instructive essay on this subject, from the pen of Mr. Richard Colvin of Baltimore, which abounds in facts and figures showing the magnitude to which it has already attained among us, as well as what great results may yet be accomplished by its more general prosecution. Mr. Colvin asserts that "there are few, if any, loca-

lities in the United States, habitable by man, in which bees, properly managed, will not pay a bountiful compensation for their cultivation, while in the more favorable localities, four or five hundred per cent per annum is no unusual product. Fifty pounds of surplus honey from a single colony would be a low estimate, and this, at war prices, would amount to twenty dollars. But in some localities in the West, it is not uncommon for the yield to reach as high as one hundred to two hundred pounds." In 1860 this country produced 1,357,864 pounds of wax, and over 25,000,000 pounds of honey, an increase of 77 per cent in ten years. Mr. Colvin says that if our farmers, say two and a half millions, were to provide themselves with only ten colonies each, the aggregate, at 50 pounds each, would be 1,250,000,000 of pounds, worth, at 25 cents only, more than \$300,000,000 per annum.

A single half acre of ground he declares to be abundant space for the location of two hundred colonies, which, under proper management in an average locality, can be made to yield from three to four tons of honey annually. He justly observes that all this, unlike any of our usual crops, is spontaneous, requiring neither plough, nor hoe, nor labor—the bees work for nothing and find themselves. These apiaries are sometimes wonderfully compact. I have seen at West Morissania, near New York, a little one story shed, not equal to ten feet square, in which a careful German gardener keeps hives enough to produce him \$400 worth of honey annually. Mr. Colvin says that "already a number of ladies are extensively and most successfully engaged in bee culture, one of whom I am informed has nearly four thousand pounds of surplus honey, besides a considerable number of swarms, the product of about one hundred colonies of bees this year." Where would four thousand pounds of honey, say at war prices, place a widow and her orphans now?

The broad assertion has been made by experienced bee keepers, that they yield more profit than any other product of the farm. Our bookstores contain many works

upon the art; great improvements have been made in hives; and the business has become so simplified as to enable women, when once fairly started in it, to become successful apiarians. Though it be neither floricultural

nor horticulture, yet it is twin brother to both, and as such, is eminently worthy of being added to the light employments for women who happen to be so situated as to be able to embark in it.

OUR METHOD.

BY ———.

A WRITER in one of the agricultural journals calls for more grape literature, and even suggests that one or more journals should be exclusively devoted to that subject. We hope he is a diligent reader of the *HORTICULTURIST*, where he will find the subject tolerably well ventilated, although it does not appear that "Our Method" has been described or so elaborately developed as to make any one "sick and tired" of it. New beginners require line upon line and precept upon precept, and straightway go their way and forget it all. This, however, may be the fault of writers upon Grape Culture who write so much, or rather, like the cotton manufacturers of the present day, placing so high a value on the raw material, spin their yarns so fine that neither warp nor woof are found of much value for practical service. The objection to these fine spun theories is, that great mystery is thrown over the cultivation, and the man of moderate means discouraged before he begins. Those who desire to make money instead of spending it, are deterred by costly modes of preparing the soil. It requires neither civil engineering nor costly earthworks to cultivate the grape according to "our method." We propose to produce the hundred fold in the simplest manner, and first give our attention to the selection of the vineyard. If the neophyte already owns the land we advise him to select the *best spot he has* for the vineyard, let it be sloping or level, be sure that it is not wet. Wild vines grow in swamps and by the banks of streams, if this is nature's, it is not "our method." Shelter is more important than situation. If the exposure is to the

sun for three-fourths of the day and sheltered from the cold winter winds, one need not be too particular as to points of compass—all farms are not bounded by latitudinal or longitudinal lines. When shelter cannot be found ready prepared, plant small evergreens from the nursery in belts (at a trifling cost) and they will soon grow so as to afford valuable protection and may be ornamental at the same time. Should the grape grower not own his land, we advise great care in selecting it, for he can then choose such land as is suitable for his purpose; he may at his leisure look for his eastern and southern and south-western slopes, his belts of timber, his soil of shale, or limestone or marl, or loam made up of due proportions of clay and sand, but he must not content himself with the mere surface, he must penetrate beneath it. The subsoil is of more value to him than the upper strata. He must provide a place for the grape roots which grow out of sight, and they must have room to roam far and wide. Hardpan is incompatible with easy and successful grape culture—it is expensive to drain and plow or trench, and a poor medium after a sum of money has been sunk upon it that would buy good land elsewhere. Let the owner of such a soil content himself with a few glass houses under which he may trench and make a soil of muck, sods and compost, carting away the contents of his cellar to repair the public roads. The soil being selected, we will suppose it to be such as has brought a fair crop of corn the past season; good corn land is generally good grape land. Such a field as would be selected for an apple orchard may be deemed to be good for

a vineyard, and the field before planting with grapes may be prepared in the same manner as for an orchard; by the ordinary two-horse plow followed with a subsoil plow in each furrow, the latter loosens the soil so as to make it mellow enough for the roots of young trees or vines. This should then be manured with stable manure or compost and cross plowed, after which lay out the rows either east and west, or in any other directions which may be most convenient and suit the situation of the field whatever the course of the rows may be the sun will gain access to them all during the day. As the land occupied is estimated by the acre and not by the square foot, that is, it is vineyard land and not city lots, we insist that the rows be ten feet apart, but before deciding on the rows we propose to reserve a space on the entire outside of the field wide enough to drive a one horse cart for the convenience of carting-in manure and for other purposes. This will save the expense of planting and afterwards rooting out vines or removing trellises. In every field of five acres there should be one cross road—a cart can easily go up and down the rows at pleasure. After the rows are laid out, set the plants six feet from each other, placing those at the end of the row three feet within the position intended for the outside posts. We assume that the field to be planted has one square corner in it. In this corner we measure off ten feet from each fence parallel to it and thus find a place for the first row and for the outside post in that row, the other rows are easily formed and a ten foot pole supplies the place of transit instrument and surveyor's chain. An as-

sistant engineer may be improvised readily out of a boy with a basket of pegs previously prepared by him at the wood pile with a hatchet, and now we are ready to set the plants; but here let us pause and inquire what kind of plants are to be set? Are they such plants as Columella, eighteen hundred years ago, advised his friend to set out, *cultivated by himself*, so as to be sure they were good? or are they such as have been sold at auction to the highest bidder because the producer thinks them unfit to offer at private sale? "Our Method" supposes that none but the very best healthy, vigorous vines be set in our vineyards and that what we lose in the cost of good vines is returned four-fold in the saving of labor—the gain in time of maturity—and in the excellence of our vineyard when it has added several years of interest to the original outlay, and when "the Inn begins to receive." If we are to set out poor plants we propose to drop the pen and draw the curtain over the rest of our description. It matters little how they are set and how they are cultivated. Our vineyardist is destined to severe toil and to reap disappointment, he produces only a puny growth, his vines refuse to fruit or the quality is inferior; the canes are without vigor; rot and mildew ensue. He hopes on, tries again and gets more discouraged. At the end of six years, if a man of great energy, he cuts his vines to the ground to make a new start or plows up his land to plant with corn, sells his trellis wire for 20 per cent. of its cost, and pronounces grape culture a humbug.

PRUNING OF FRUIT TREES.

T. T. S.

Well understood as it may be by professed pomologists, or even by good gardeners, yet among the mass who plant trees I am convinced that there is no subject which so closely relates to their interests, that is

so poorly understood or the study of which is so much neglected as the proper manner and use of pruning fruit trees.

Those who distribute trees can but gain a correct idea of the miserable ignorance of

all that pertains to tree growth, which prevails among the class who mostly plant trees. This want of enlightenment is not felt alone by those who inhabit the western wilds or by our backwoods farmers, but is seen even in those who dwell in close proximity to that great centre of intelligence, enterprise, and wealth, New York City.

A couple of years ago I attended to the delivery of something over ten thousand fruit trees in New Jersey, and but a short distance from New York. These trees were sold to a large number of persons, and I do not remember that so many as half a dozen of the men who came and paid me their money for trees, knew how to go home and plant and care for them properly. So far as possible, I would give to each one particular directions and explanations. I would say to a man as he took his trees and vines: "Neighbor, what are you going to do with that bundle of trees?" His answer would be in almost all cases, "Why, I am going to plant them." "Please to tell me just how you are going to plant them?" "Well, I shall dig a hole, put the roots in and throw in a pail of water and fill up the hole." "Well, what else?" "Nothing — that's enough, ain't it?" "Would you not shorten in some of that luxurious growth of limbs?" "I would not, and don't see the need of it, and besides it looks foolish to pay a large price for extra thrifty trees and then cut the limbs back and spoil the looks of the tree." "Well, sir, if you want an early, healthy, vigorous growth, you must cut back at least one-half of the new growth, and it would be still better if you made it two-thirds." "Can't see any reason for doing such a thing; sometimes I clip off the end a little, but to cut back two thirds would certainly spoil the tree." Then I would explain to him the principles which govern tree growth by saying: "This tree has been taken from its natural resting place, and until a new set of fibrous roots are formed the main roots are not able to furnish but a very small quantity of sap for the tree and its leaves to live on. Now we will suppose that this tree has in its pre-

sent untrimmed state a thousand buds, each one of these buds will put forth a leaf and each leaf will consume its portion of sap, but the roots being unable to supply them with anything like the needful quantity of sap they take what they can furnish to supply them alone, which leaves no sap to make *growth* with, and until the *tree* grows the *roots* cannot to much extent. Therefore your trees drag out a half-alive existence the first and second year, or die outright. But reduce those thousand leaves, by pruning, to three hundred and the roots are able to support the call made on them, make some limb growth beside, and your tree lives and makes more growth in two seasons than it otherwise would in four. This sounded reasonable, and I was usually thanked for the information, of which they knew nothing before. A large portion of the stock consisted of dwarf pears, but hardly a man ever heard that dwarf pears needed to be pruned, either at planting or any other time. Some bought of dwarf pears a hundred dollars worth, and never mistrusted that they needed the highest kind of feeding and the most severe pruning to make them productive, healthy and vigorous, but supposed they needed the same general treatment as an apple or cherry tree.

This want of knowledge does not pertain to New Jersey alone, but is as widespread as our continent. I cite the above instances merely to show how wanting the mass are in requisite knowledge in this particular branch, and even so near a great city, where people are supposed to be more advanced than in the interior. Go where you will and you will find that yearly, immense quantities of trees are sent through the country, planted, and cared for in ignorance, or, rather, uncared for at all, and die. Thus vast sums of money are spent for which the spender gets no return, and the country is deprived and delayed in receiving the fruit it ought. Public as well as private interests are made to suffer. I hope it is not the fault, though I fear it is, of some tree agents and nurserymen that those that buy their wares are not more fully posted how to

take care of them. If any nurseryman or tree agent who sells a tree would briefly explain how to take care of it, great indeed would be the good. It is a shortsighted policy that deems, that the more trees that

die the greater room for more: the reverse is true. Can there not be a more general dissemination of those simple rules which shall teach the people how to plant, and prune, and care for their fruit trees?

HOW TO MAKE A PARADISE IN THE COUNTRY.

BY THE AUTHOR OF "LETTERS FROM UNDER A BRIDGE."

CONCLUDED.

TOUCHING "grounds." The first impulses of taste are dangerous to follow, no less from their blindness to unforeseen combinations, than from their expensiveness. In placing your house as far from the public road as possible (and a considerable distance from dust and intrusion, seems at first a *sine qua non*) you entail upon yourself a very costly appendage in the shape of a private road, which of course must be nicely gravelled and nicely kept. A walk or drive, within your gate, which is not hard and free from weeds, is as objectionable as an untidy white dress upon a lady, and as she would be better clad in russet, your road were better covered with grass. I may as well say that a hundred yards of gravel-walk, properly "scored," weeded, and rolled, will cost five dollars a month—a man's labor reckoned at the present usage. Now no person for whom this letter is written, can afford to keep more than one man servant for "chores." A hundred yards of gravel-walk, therefore, employing half his time, you can easily calculate the distribution of the remainder, upon the flower-garden, kitchen-garden, wood-shed, stable, and piggery. (The female "help" should *milk* if I died for it!) My own opinion is, that fifty yards from the road is far enough, and twenty a more prudent distance, though, in the latter case, an impervious screen of shrubbery along your outer fence is indispensable.

The matter of gravel-walks embraces several points of rural comfort, and, to do without them, you must have no young ladies in your acquaintance, and especially,

no young gentlemen from the cities. It may not have occurred to you in your side-walk life, that the dew falls in the country with tolerable regularity; and that, from sundown to ten in the forenoon, you are as much insulated in a cottage surrounded with high grass, as on a rock surrounded with forty fathom water,—shod *a la mode*, I mean. People talk of being "pent up in a city," with perhaps twenty miles of flagged sidewalk extending from their door-stone! They are apt to draw a contrast, favorable to the liberty of cities, however, if they come thinly shod to the country, and must either wade in the grass or stumble through the ruts of a dusty road. If you wish to see bodies acted on by an "exhausted receiver," (giving out their "airs" of course,) shut up your young city friends in a country cottage, by the compulsion of wet grass and muddy highways. Better gravel your whole farm, you say. But having reduced you to this point of horror, you are prepared to listen without contempt, while I suggest two humble *succedanea*.

First: On receiving intimation of a probable visit from a city friend, write by return of post for the size of her foot (or *his*.) Provide immediately a pair of India-rubber shoes of the corresponding number, and on the morning after your friend's arrival, be ready with them at the first horrified withdrawal of the damp foot from the grass. Your shoes may cost you a dollar a pair, but if your visitors are not more than ten or twelve in the season, it is a saving of fifty per cent. at least, in graveling and weeding.

Or, Second: Enclose the two or three acres immediately about your house with a ring fence, and pasture within it a small flock of sheep. They are clean and picturesque, (your dog should be taught to keep them from the doors and porticoes,) and by feeding down the grass to a continual greensward, they give the dew a chance to dry off early and enlarge your cottage "liberties" to the extent of their browsings.

I may as well add, by the way, that a walk with the sod simply taken off, is, in this climate, dry enough, except for an hour or two after a heavy rain; and besides the original saving in gravel, it is kept clean with a quarter of the trouble. A weed imbedded in stones is a much more obstinate customer than a score of them sliced from the smooth ground. At any rate, out with them! A neglected walk indicates that worst of country diseases, a mind grown slovenly and slip-slop! Your house may go unpainted, and your dress, (with one exception) submit to the course of events—but be scrupulous in the whiteness of your linen, tenacious of the neatness of your gravel-walks; and, while these points hold, you are at a redeemable remove from the lapse, (fatally prone and easy,) into barbarianism and misanthropy.

Before I enter upon the cultivation of grounds, let me lay before the reader my favorite idea of a cottage—not a *cottage ornée*, but a *cottage insoucieuse*, if I may coin a phrase. In the valley of Sweet Waters, on the banks of the Barbyzes, there stands a small pleasure palace of the Sultan, which looks as if it was dropped into the green lap of nature, like a jewel-case on a birth-day, with neither preparation on the part of the bestower, nor disturbance on the part of the receiver. From the balcony's foot on every side, extends an unbroken sod to the horizon. Gigantic trees shadow the grass here and there, and an enormous marble vase, carved in imitation of a sea-shell, turns the silver Barbyzes in a curious cascade over its lip; but else, it is all Nature's

lap, with its bauble resting in velvet—no gardens, no fences, no walls, no shrubberies—a beautiful valley with the sky resting on its rim, and nothing in it save one fairy palace. The simplicity of the thing enchanted me, and, in all my yearnings after rural seclusion, this vision of old travel has, more or less, colored my fancy. You see what I mean, with half an eye. Gardens are beautiful, shrubberies ornamental, summer-houses and alleys, and gravelled paths, all delightful—but they are, each and all, taxes—heavy taxes on mind, time, and "dollar." Perhaps you like them. Perhaps you want the occupation. But *some* men of small means, like a contemplative idleness in the country. Some men's time never hangs heavily under a tree. Some men like to lock their doors (or to be at liberty to do so,) and be gone for a month, without dread of gardens plundered, flowers trod down, shrubs browsed off by cattle. Some men like nothing out of doors but that which can take care of itself—the side of a house or a forest-tree, or an old horse in a pasture. These men, too, like that which is beautiful, and for such I draw this picture of the *cottage insoucieuse*. What more simply elegant than a pretty structure in the lap of a green dell! What more convenient! What so economical! Sheep (we may "return to muttons") are cheaper "help" than men, and if they do not keep your greensward so brightly mown, they crop it faithfully and turn the crop to better account. The only rule of perfect independence in the country, is to make no "improvement" which requires more attention than the making. So—you are at liberty to take your wife to the springs. So—you join a coterie at Niagara at a letter's warning. So—you can spend a winter in Italy without leaving half your income to servants who keep house at home. So—you can sleep without dread of hail-storms on your graperies or green-houses, without blunderbuss for depredators of fruit, without distress at slugs, cut-worms, drouth, or breachy cattle. Nature is prodigal of flowers, grapes

are cheaper bought than raised, fruit *idem*, butter *idem* (though you may'nt think so,) and as for amusement—the man who can not find it between driving, fishing, shoot-

ing, strolling, and reading, (to say nothing of less selfish pleasures,) has no business in the country. He should go back to town.

PEACH TREES—PRUNING.

Of all the fruit trees there is no one which seems to meet with such general neglect in proper treatment as the peach. Whether this proceeds from ignorance, indifference, or because it is supposed that the peach tree can take care of itself, we leave to the experience of our readers. But it is nevertheless a fact, and one which is clearly exhibited in almost every collection of peach trees that comes under our observation. There are exceptions, it is true—exceptions among intelligent and careful fruit growers; but these exceptions are, as usual, just sufficient to prove the rule.

The most common complaint against the peach is that of being *short-lived*, and it is no wonder. The only marvel is that, under the treatment it gets, it continues to worry out even the existence it does. There is no sufficient reason why this should be so. We can remember in our day, peach trees of venerable age, yielding good and luscious fruit year after year even in their old age, and succumbing at last only when nature could hold out no longer.

How different from the peach of the present day. To be sure there are more causes now operating against the successful growth of the peach than in the days of which we speak; but, even all things considered, there is not the success there ought to be, and this from sheer neglect.

We do not propose in the present article to go into all the abuses the peach is subject to, but simply to speak of one particular neglect, because now is the proper season to attend to the matter.

One of the chief neglects of the peach, and a very vital one it is, we consider to be neglect of the proper *pruning* and *shaping* of the tree.

This has more to do with the longevity of the tree than is generally supposed.

The peach tree is as susceptible of training and taking a comely shape as any other fruit tree. And yet, as usually seen, it is about the most ungainly and ill-shaped among them all. Left to take care of itself, it usually presents among fruit trees an appearance of deformity of every possible kind and description—either a crooked, twisted tree, with an unbalanced top, or else two



Peach tree left to itself.

or three main branches springing from the trunk and terminating in a high head, which carries all the foliage and all the fruit. As a consequence of this, either the violence of winds or the weight of a full crop breaks off these main branches at the trunk, or splits them in such wise that an ugly, gum-exuding ulcer is generated, and this process goes on until, exhausted, the tree languishes and dies.

All this may be avoided by careful training and judicious pruning. Don't be afraid to use the shears. What you want to get is a compact mass, well-developed, evenly-balanced; one over which a large crop may be evenly distributed without causing an undue strain upon any one part of the structure: a shape which will prove an

economy in respect to space, as affording the greatest possible room for a crop within the smallest area.

Do you ask *how* this is to be done? We answer: by what is known as the *shortening-in* process. Do you inquire, *when* is this to be done? We reply, Now. You can't do better than to commence immediately. The process is to go over the whole tree and clip off from one-half to three-quarters of the last year's growth. Yes, all that bright, handsome growth of young wood, those ruddy stems, are to be clipped; somewhat after the fashion of the man who cuts your hair, you must go over the whole surface, clipping off at least one-half of the growth. This will depend, of course, on the age of the tree: if young, so much the better, and the greater need of pruning. You have then the chance of making a well-shaped and long-lived tree. Care must be exercised, however, in the *modus operandi*. Endeavor to cut to a bud on the outer side of the stem; this will give, when the next growth starts, a prolongation outwardly, and prevent the tree becoming too crowded in the centre, or interior part.

If you neglect this precaution, and cut hap-hazard, you will have some branches growing straight upward and others growing into the interior of the structure, which

will in the end make matters worse than if you left the tree to its own inclination.



Peach tree properly pruned.

Properly pursued and you will secure a well-balanced and handsome-shaped head to your tree, whose foliage, when in leaf, will be an object of decided beauty. The late Mr. Downing attached very great importance to this shortening-in process, and the reader, by referring back to some of the earlier numbers of the *HORTICULTURIST*, will find valuable instruction from him in all these particulars.

We have confined ourselves to this one point in the present article because, as we have stated, now is the time to put these principles in practice; the further care of the tree, and the precautions to be taken to guard against injuries from other sources, come in later in the season, and such instruction as may be necessary may be deferred to a later number.

BLOODGOOD PEAR.

THE Bloodgood is the highest flavored of all early pears, and deserves a place even in the smallest garden. It was named from the circumstance of its having been brought into notice about 1835, by the late James Bloodgood, nurseryman, Flushing, L. I. The sort was brought to that nursery as a new variety, without a name however, by some person on Long Island, unknown to Mr. B., who was never able afterwards to trace its history further. The tree is rather short jointed, with deep reddish brown

wood, grows moderately fast, and bears early and regularly. The fruit, like that of all early pears, is better if ripened in the house. It surpasses every European variety of the same season, and together with the Dearborn's Seedling, another native sort, will supplant in all our gardens the Jargonelle, and all inferior early pears.

Fruit of medium size, turbinate, inclining to obovate, thickening very abruptly into the stalk. Skin yellow, sprinkled with russet dots, and net-work markings, giving it a

russetty look on one side. Calyx strong, obliquely inserted, without depression, open, set almost without depression. Stalk short, dark brown, fleshy at its base. Flesh



Bloodgood Pear.

yellowish-white, buttery and melting, with a rich, sugary, highly aromatic flavor. The thin skin has a musky perfume. Core small

Ripe from the 25th of July to the 10th of August.—*Downing.*

TO MAKE A PLANT PRODUCE FRUIT OR FLOWERS.

BY E. AYCRIGG.

“To make a plant produce fruit or flowers, crowd its roots and starve it, and it will bear itself to death. To preserve its life, give it fresh space and fresh soil to form new roots and it will form new wood.”

This corresponds with the practice of dwarfing trees by placing them on stocks of a smaller species that shall not afford a

full supply of sap. They were the concluding remarks of a very successful amateur, who had a large ornamental garden, and green house, and hot house in beautiful condition, and managed entirely by himself. I expressed my admiration of the crop on a lemon tree. The owner remarked: “This is only a medium crop. Last year it was

much less. Next year it will be much more. The year after it would also be large if I should make no change. But after next year's crop I shall put it into a larger box with half an inch of fresh soil at the bottom and on each side, and that small addition will materially reduce the next crop. But it is necessary to do this about every three years in order that it may form new roots.

"That tree belonged to an old lady in town who had nursed it with great care for many years, but could get no fruit. She

had it in a large box, and every year gave it fresh soil. She was afraid that she would kill it if she should follow my advice, and sold it to me. I immediately cut off most of the roots and put it into this small box, and you see the consequence. In the same manner with any other fruit, or with roses or any other flower, if you wish to make them bear you must starve them."

He also said that he did not water this lemon tree until the fruit yielded to a gentle pressure.

Passaic, N. J., Dec. 20, 1864.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

THE HORTICULTURIST FOR 1865. We call the attention of our readers to the opening numbers of this new volume as an evidence of our intention to keep it up to a high standard, each succeeding number we propose to make better than the last, and we are perfecting our plans as rapidly as possible to secure the best talent the country affords, on all subjects relating to Horticulture and kindred arts.

The accomplished author of "my Farm of Edgewood" will furnish an illustrated article each alternate month during the year, and the author of "Ten acres enough" will write for each number. We shall endeavor to secure the aid of all practical writers throughout the country, and our readers are invited at all times to communicate to us any sound *practical* facts that come under their observation. Our aim is to make the HORTICULTURIST high and reliable authority and to give purely practical information on all subjects of which it treats. We do not place much value on the best written essays that do not convey practical information.

February—will be printed on heavy calendered paper and elegantly illustrated. It covers a field not occupied by many of the valuable publications on this subject. Readers of the HORTICULTURIST for the past few years will find here collected in convenient form, many of the best designs that have appeared in this magazine, the matter accompanying which has been entirely re-written for this publication. The illustrated article on the construction of balloon frames is entirely new to most of our readers, and worth many times the price of the book to all who contemplate the erection of even an ordinary out-building. The designs given are mostly for low-priced buildings, churches, cottages, stables, ice-houses, summer-houses, school-houses, gates (a great variety,) fences, &c., with thoroughly practical descriptions. 12mo. Price, \$1 50 post paid to any address. Geo. E. & F. W. Woodward, authors and publishers, office of the HORTICULTURIST, 37 Park Row, N. Y.

WOODWARDS' COUNTRY HOMES.—This work will be published about the 25th

SUSPENSION OF CLUB RATES.—All subscribers to the HORTICULTURIST are now on an equal footing, the price being uniformly

TWO DOLLARS PER ANNUM, and we intend all shall receive the full value of their money.

New subscribers will find the volumes for 1862, 1863, 1864 and the numbers for 1865, a profitable and desirable investment. We send the three volumes, bound and post paid, and the numbers for 1865 for SEVEN DOLLARS. They contain above 1700 royal octavo pages, and 500 original illustrations. Send us a postal order for seven dollars, and by return mail the volumes will be received in prime condition.

WOODWARD'S GRAPERIES & HORTICULTURAL BUILDINGS.—A thoroughly practical illustrated work on this subject, being the result of several years professional practice in the design and construction of these buildings, will be published by us at this office on or before the 1st of April, 12mo., price \$1.50 post paid to any address.

VOLUMES FOR 1853 AND 1859 WANTED.—Any of our readers having these volumes to dispose of will please send price to this office. We are prepared to buy at any time back volumes and back sets of the HORTICULTURIST from 1846 to 1860, inclusive. Parties having full or incomplete sets which they would like to dispose of for cash, or exchange for agricultural and horticultural books or new subscriptions, will greatly oblige us by sending list and the lowest price. We buy to sell again, and prices must be made accordingly.

PARTIES who subscribe to *Hovey's Magazine* and the *Gardeners' Monthly* through us, are hereby notified that the publication days of these Magazines are from the 10th to the 15th of the month, our publication day being the 1st.

We consider these Magazines to be sound, reliable, permanent, first class publications, and in any case of failure by mail or from other causes, we make the numbers good. The fact that we are the New York agents of these publications is sufficient evidence of the confidence reposed in us, and of our

opinion of those publications and their proprietors. Any of our readers subscribing for any publication through us, have our guarantee for the entire fulfillment of the subscription. We make this explanation in answer to several enquiries, and close by calling the attention of our readers to the value of both *Hovey's Magazine*, and the *Gardeners' Monthly*. We send them with or without the HORTICULTURIST, one for \$2 per annum, two for \$3 75, the three \$5 50.

A NEW FIRM.—Messrs. Fleming & Davidson, the well known seedsmen, of 67 Nassau Street, N. Y., have dissolved partnership and a new concern has been formed under the firm of Henderson & Fleming, Mr. Peter Henderson, of Jersey City, becoming a partner. This firm is composed of practical men; they understand their business thoroughly, and we feel confident that all orders sent them will be faithfully and promptly filled, and that the articles they send will prove to be just what is represented. Our distant subscribers, who order seeds by mail from Messrs. Henderson & Fleming, can rely upon getting as good an article and at as reasonable a price as by a personal application.

GRAPES AT CINCINNATI.—Notwithstanding Mr. Yeatman's opinion that the culture of the Grape has proved a failure in the neighborhood of Cincinnati, there are others who yet have faith in its ultimate success. Among these latter may be named E. A. Thompson, Esq., of Cincinnati, who informs us that he is preparing his grounds on the Kentucky hillside to plant, this coming spring, 16,000 vines. The varieties that he chooses—excluding, it will be seen, the Catawba—are as follows: 6000 Delaware, 3000 Norton's Virginia, 2000 Concord, 4000 Ives' Seedling, and another 1000 divided among some twenty varieties.—*Ohio Farmer*.

We have seen a very delicate light wine, purporting to be made at Ithaca, on the Cayuga Lake, from the Black Hamburg

grape, reared in the open air. It was very agreeably flavored, and had the color of the rather paler berries of the grape from which it was named. It was said that the vineyard from which it is produced is on an island in the lake. We have met with no account of this wine, or of the out-door cultivation of the Hamburg grape in that quarter, but it has struck us that, considering the high price which Black Hamburg grapes bear in the market, it would be more profitable for the cultivator to dispose of them in the cluster than to give himself the trouble of making them into wine, superintending its fermentation, and putting it into bottles. We know, of a German cultivator of American grapes on Long Island, who is exceedingly anxious to make wine, and has all the apparatus for the purpose, but who finds, when the season comes, that grapes bring so good a price as to make it impossible for him to resist the temptation of taking the ready cash for his fruit.—*N. Y. Evening Post.*

Being in Cincinnati upon Saturday, of course I attended the meeting of the Horticultural Society, where I met a goodly number of the fruit-men of that place. It appears that Thomas Yeatman, a well known grape grower of that region, had written a letter to the disparagement of Cincinnati as a grape growing region, and a committee had been appointed to set the matter right. This brought out a spirited discussion as to whether grape growing could be still made profitable there. Of course the old vignerons were piqued by Mr. Yeatman's treason, and will take the field in defence of their ancient renown. I took occasion to give the grape men notice that the Lake Erie region was in the field, and that unless the Cincinnatians bestirred themselves in this matter we should eclipse the fame of their vineyards. John E. Mottier, the wine king of Cedar Avenue, promises us the figures of his vintage for 1864, which he thinks will show a healthy state of affairs on his side. When the Committee report the state of the grape business about Cincinnati

we hope to give the results to the readers of the *Ohio Farmer*.

After the close of the meeting of the Horticultural Society, there was a meeting of the Wine Grower's Association; the long table was over filled with tasters, and the wines were superb. John E. Mottier—the old wag, had placed upon the table a sample of imported Johannisberg, which cost \$75 a dozen and a sample of his Delaware vintage of 1864, and the marks of all the tasters was considerably higher for the young Delaware, than for the ripe Johannisberg! This was a big joke, but after it was known what we had been tasting, every one declared the marking was right, and upon my honor, I must say never such Delaware moistened my lips before, and so young. Mr. Mottier has sold the entire vintage of two hundred gallons at six dollars a gallon. When that wine gets ripe it will make a sensation among wine tasters. If Mottier had driven the nail before, this clinches it, that he is at the head of the producers of pure native wine.—*Ohio Farmer.*

GRAPE AND WINE MEN.—OHIO GRAPE AND WINE GROWERS' ASSOCIATION.—The subscribers urgently request all persons in the State or adjoining districts, interested in the growing of grapes or production of wine, to meet at the *Ohio Farmer* Office, in the city of Cleveland, on the *first Wednesday of February next*, at 10 o'clock, A. M., to organize an association as above named.

The intention is to hold quarterly meetings at various points in the grape districts for examination and discussion of subjects pertaining to our native grapes and wines—and to make an exhibition of products at the annual meeting to be held in September. Those who may be unable to attend are requested to send us their names. Those receiving this circular will please reply at once, and also send to F. R. Elliott, at Cleveland, a list of all persons in their neighborhood interested in our object.

F. R. ELLIOTT,	M. B. BATEHAM,
J. P. DAKE,	JNO. A. WARDER,
GEO. POWERS,	JOHN SPALDING,

GEO. W. CAMPBELL, J. P. KIRTLAND,
 J. J. HARRISON, J. A. BRAYTON,
 W. A. LILLIE, W. F. GREER,
 D. H. BECKWITH, ALTON POPE,
 S. B. MARSHALL, CHAS. PEASE,
 GEO. M. BEELER, GEO. W. DEAN,
 R. BUCHANAN, J. E. MOTTIER,
 ISRAEL HALL.

FRUIT PRESERVING HOUSE. — Messrs. Nyce, Shirk & Co., of Indiana, came to Cleveland last season and erected a building for preserving fruits and other perishable articles, such as butter, eggs, &c., which are damaged by exposure to the common atmosphere. The building is made with double walls, like an ice-house, the outer casing being of sheet iron, the space between the walls filled in with shavings, saw-dust, &c. The storing room of this building is of the capacity of holding fifteen thousand bushels of fruit, which is placed on shelves in tiers and ranges, so as to be readily accessible when wanted. The atmosphere of the room is kept dry by the use of chloride of calcium, which absorb the moisture, and it is passed out of the building in lead pipes from gutters upon the floor. By this means Mr. Nyce says he gets rid of decay by destroying the elements which produce or support decay. Mr. Nyce has studied this principle closely for years, and is fully satisfied that his theory is correct. This building is now stored with six thousand bushels of apples, seven tons of Catawba grapes, fifteen hundred bushels of tomatoes, and a large quantity of butter and eggs, pumpkins, &c. As the house was not ready till late in the season, the proprietors were not able to get it entirely filled when the time came for closing it for the season. This enterprise is deeply interesting to all who raise and would preserve our fine fruits, and its perfect success is devoutly to be wished for, a fact which we hope to be able to announce when the fruit rooms are opened next spring.—*Ohio Farmer*.

HOME AGAIN. Mr. Daniel Barker, a frequent contributor to our columns, has re-

turned after an absence of some months in England having picked up some novelties in the way of seeds, &c., He offers them for sale. See advertising columns:

BOOKS, &c., RECEIVED.

WET DAYS AT EDGEWOOD, with Old Farmers, Old Gardeners and Old Pastorals. By the author of "My Farm of Edgewood." New York. Charles Scribner. Price, \$2 00.

One of the most graceful writers we have, is the scholarly farmer of "Edgewood." This last issue is the result of a vast research among writers on agricultural matters from Hesiod and Homer down to Loudon. It adds new dignity to a farmer's life to read of these old authors and scholars, and the attention they gave to agricultural pursuits. Rubbish is cast aside and the pages glisten with selected gems.

All farmers who have a library, (and all ought to have;) all country gentlemen, and those who appreciate such a readable and fascinating writer, will find this book a desirable addition.

NEW WORK ON THE ORCHARD HOUSE.—Cordon Training of Fruit Trees for the Orchard House and Open Air. By T. Collings Brehaut, with a supplement, containing remarks on cordon training of the pear; the cultivation and pruning of peach trees in pots; the best varieties of fruits for pot-culture; and general remarks on orchard-houses, adapted to the climate of the United States. By C. M. Hovey, President of the Massachusetts Horticultural Society, editor of Hovey's Magazine of Horticulture and author of Fruits of America. One volume, octavo, price, \$1 25, post-paid to any address. This volume contains, in addition to the large experience of Mr Brehaut, all the information needful for the cultivator to successfully cultivate the peach tree in pots, with selections of the best fruits adapted to the orchard-house and pot-culture. The rapidly increasing demand for orchard-houses and information on orchard-house culture calls for precisely such a work as

this, and we are glad to see that so able an author has taken the field. Orchard-house culture will in a few years be found desirable on places of very moderate pretensions; and in fact the cultivation of all varieties of fruit usually grown under glass is now attracting the attention of the masses. Let the public understand that the mystery in which such things have been kept is a swindle of their intelligence, and that the whole art is one of perfect simplicity and fascination; then these luxuries of life will become more abundant.

HISTORY OF THE AGRICULTURAL ASSOCIATIONS OF NEW YORK, from 1791 to 1862. By William Bacon, of Richmond, Mass.

COLEMAN'S RURAL WORLD, AND VALLEY FARMER. St. Louis, Mo. Vol. 18, No. 1. Semi-monthly. Two dollars per annum. This is the *VALLEY FARMER* in a new dress, large quarto size, good paper, and fine topographical appearance, and has all the evidences of prosperity and careful editorship. Now that Missouri is free, and its rich agricultural treasures open to all, the *Valley Farmer* will have a new field in which to extend its influence and reap its reward. Missouri naturally has all the elements of an agricultural paradise and will bear a strong introduction to the attention of our westward-bound settlers, and the immense swarm of emigrants that daily land at Castle Garden, in search of new homes and new enterprises.

NEW ENGLAND FARMER. Published at Boston, by R. P. Eaton & Co., weekly, at \$2 50 per annum in advance. After a suspension of some months this popular Journal reappears, exhibiting its former enterprise. This paper, now in its twentieth volume, has always been considered a standard sheet, and its disappearance for a time was generally lamented. The usual modesty of publishers has been sorely tried by the great advance in paper and printers' labor and materials, but we know of no case in which a reduction in size was made, or an increase in price but what has been cheerfully consented to. At the old figures

there must eventually have been an end of all publications. Publish a first rate paper, magazine, or book, ask a fair return for the service, and the public are even more liberal in these days of war than in the piping times of peace.

BABBITTIAN SYSTEM OF PENMANSHIP. Published by Babbitt & Wilt, Miami Commercial College, Dayton, Ohio.

This system is self-teaching, with full explanations, copies, &c., is so well arranged that one desirous of learning can soon acquire the whole mystery without the aid of a teacher. It is sent by mail, post paid, to any address, for one dollar and fifty cents. After a thorough examination of this system, we find ourselves unconsciously writing a better hand than has hitherto been our practice.

ACT OF INCORPORATION, AND BY-LAWS OF THE PENNSYLVANIA HORTICULTURAL SOCIETY. Instituted 1827; incorporated 1831.—We are indebted to one of the active members of this Society for the following, and should be glad at all times to receive a synopsis of such proceedings of the Society as are of general interest. The Society meet at their new Horticultural Hall, southwest corner of Broad and Walnut Streets, Philadelphia.

"The Pennsylvania Horticultural Society is the oldest existing one in the United States, having been instituted in 1827. During the period which has since elapsed, it has enrolled over two thousand names on its list of contributing and honorary members, comprising many of our most distinguished citizens. It has held monthly and annual exhibitions and displays of horticultural products; some of which have never been equalled in this country in extent, magnificence and patronage. It has distributed, in premiums, over twenty thousand dollars, to all classes of contributors, and has been the medium of introducing many new varieties and species of plants, fruits and vegetables that would otherwise have remained unknown to the general public. Its large and valuable library, the most extensive of

its kind in this country, has been the means of disseminating a vast deal, not only of Horticultural knowledge, but of information on other kindred topics of natural science. The social intercourse of its members, also, has served to diffuse a more correct taste and thorough knowledge of the art than had formerly prevailed.

"In order to extend still more widely its sphere of usefulness, and to offer to its members a convenient and attractive place of meeting, the Society have leased the large hall, at the south-west corner of Walnut and Broad Streets; a stately and commodious room, centrally situated, well lighted, and amply spacious for all its monthly displays. The Library will here be readily accessible to every member, one night in each week, and the reading tables will be provided with the leading horticultural papers of the day.

"The Hall will be open every Tuesday evening throughout the year. The first Tuesday evening of each month will be devoted to the discussion of horticultural topics of current interest; the second to the monthly display of fruits, flowers, vegetables, designs, &c.; the third, to the stated business meetings; and the fourth and fifth, to informal conversational meetings, the reading of periodicals and social intercourse.

"The discussion of horticultural subjects on one stated evening of each month, is a new feature in the transactions of the Society, and it is believed, has added much to its attractiveness and usefulness.

"While the other privileges of the Society are confined to members, the competition for premiums is open to all. It is hoped that the liberal action of the Society, in this respect, and the varied and useful character of its meetings and discussions, will induce all its contributors, visitors and friends, to become members, and aid in increasing its usefulness to the community.

"The price of annual membership is three dollars; of life membership, twenty-five dollars, which entitle to one member's and

two ladies' tickets of admission to every meeting and monthly display, also to the free use of the library, both at the hall and at home, privileges which are a rich equivalent for the small contribution required.

"Persons desirous of becoming members, can do so on application to the Collector, or to any officer or member of the Society, one month prior to admission."

VICK'S ILLUSTRATED CATALOGUE OF SEEDS, AND GUIDE TO THE FLOWER GARDEN, for spring of 1865. Containing accurate descriptions of the leading floral treasures of the world, with plain and full directions for sowing seed, transplanting and after culture, illustrated with numerous engravings and two colored plates. This is one of the most complete catalogues that has come under our notice, and is evidence of the energy and business talent of Mr. Vick. The most successful men are those who deal in first class articles, and advertise them in a liberal manner. This catalogue is sent, post-paid, for ten cents, and Mr. Vick's regular customers receive it free.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, and Green-House Plants, cultivated and for sale at W. L. Ferris' Oakland Nursery, Throg's Neck, Westchester Co., New York. 1864 and 1865.

Catalogue of Fruit and Ornamental Trees, Evergreens, Flowering Shrubs and Plants, for sale by F. Trowbridge, Milford, Conn.

Transactions of the Hampshire, Franklin and Hampden Agricultural Society for the year 1864. Forty-sixth annual report.

President's Opening Address, Illinois State Fair, Decatur, 1864. By William H. Van Epps, President Illinois State Agricultural Society.

CORRESPONDENCE.

Vernon, Oneida Co., N. Y., Jan. 9, 1865.

GEO. E. & F. W. WOODWARD, 37 Park Row, N. Y.

Gentlemen:— * * * * *

From my early boyhood I have had a passionate love for the growing and tending of fruits and flowers, and it seems as if every year added to my passion for these things, and I think I can truly and safely say that but few have so great a love for a tree, a shrub, or a plant; and I have long looked forward for the time when I could build my home in the country, where I should have room to gather my floral friends around me, and become surfeited with those fruits God has so bountifully bestowed upon us: in fact, build up a home in which I could feel happy and contented.

I have just been reading "Ten Acres Enough," and the perusal has but added fuel to the flame. It almost made me forget my present position, and transported me to the beauties and happiness of the author's home; and now the question comes up, Why cannot I go and do like him? as I take it from his book, there is still room. But I am a comparative stranger in New Jersey, only I know it has been the ridicule of other states, and represented as almost a sandy waste; but its climate I have always supposed to be fine, and much more mild than central New York. Am I right in regard to its climate, and has its soil been grossly misrepresented? In *your opinion*, can the growing of fruit be made profitable, if properly conducted? Are desirable lands in desirable locations still to be bought there at reasonable prices? What section of the State is the best for the object I am writing about, good society included?

Now, as you understand something of my feelings, and supposing I had a capital of from \$2,000 to \$10,000, what counsel would you give? Yours truly,

L. A. GRISWOLD.

THERE is an old proverb something like

this "that boys throw stones at fruit trees." New Jersey stands among her envious sisters, a tree with golden fruit, and gracefully receives the ridicule and deep rooted prejudices so industriously exercised and cherished against her; silly prejudices that have existed and increased from generation to generation from the earliest settlement of the country.

You are right in regard to its climate, and its soil has been grossly misrepresented, the Northern half of the state with which we are familiar, is as far from a sandy waste as the Genesee valley, and there are many counties that are unsurpassed in the fertility and beauty of the land by any section this side of the Prairie States. In our opinion Fruit growing of almost every description and every agricultural pursuit properly conducted can be made very profitable, all parts of New Jersey, being accessible to the two great markets on this continent, New York and Philadelphia. Desirable lands in desirable locations can be had at reasonable prices, say from eighty to one hundred dollars per acre, in Greenbacks, for good farming lands, improved, and within two hours travel of New York, fancy sites near depots command higher figures. We paid \$300 per acre for our own farm, 30 acres, ten miles from the City Hall, close by the first depot on the Erie Railway, our business hours in New York are from 9 to 5 and we can go from our library table to our office desk and *vice versa* (fourteen times daily) in 45 min. in summer, and 55 minutes in winter. The southern part of New Jersey we are not familiar with, but we are contemplating a "raid" in Strawberry time to Burlington and thence down, among the new settlements, if our friends in that vicinity will show us the way out in time for publication day.

The best counsel we can give you is to come down and look the state over, see for yourself, we think you will be well treated. (Eds.)

SANDY HOOK, Fairfield Co., Conn.

January 14th, 1865.

MESSRS. WOODWARD: What, in your opinion, is the best exposure for orchards, particularly apple and pear orchards, (the latter containing both standards and dwarfs)? For the grape a southwestern exposure is recommended as generally preferable, but I think I have seen a northern exposure spoken favorably of, for the apple in particular; as a warm spell in the early spring would prematurely start the buds, to be nipped by a cold spell afterwards. If you can answer this question, about the apple and pear in the columns of the HORTICULTURIST, it may benefit several of your subscribers, and particularly one young in life, who has just commenced Horticultural pursuits. Yours,

S. N. BEERS.

In your latitude we should prefer a southern exposure for an orchard. Such an exposure would prolong the season and enable the wood to ripen better than with a northern aspect. South of this, north hill sides would be preferable.

Buffalo, Jan. 12, 1865.

MESSRS. GEO. E. & F. W. WOODWARD:

On reading the construction of the model Suburban Cottage in the January number, it occurred to me to ask you, whether the construction of such a wall could be made by laying up the slats so as to leave one, or even two inches of space between them, and have that space filled up with coarse gravel mortar, while laying up the slats?

Could such a wall be made as cheap, or cheaper, as all slats, so as to answer for out-buildings or barns, where the gravel would be on the spot?

If these questions would not be objectionable to be answered in the HORTICULTURIST, it would oblige at least one subscriber. G. Z.

The slats can be laid one or two inches apart and filled in with mortar, and would save some in the expense.

We think the best manner of making a

cheap wall, is to construct a light skeleton balloon frame, and fill in with grout and gravel, thus making a gravel wall, with the addition of corner posts, door and window posts, and in wide spaces between windows, one or two perpendicular studs may be introduced; the side girths and plates attached to these give firm bearings for floors and rafters, and knit the walls firmly together. The expense is not much greater than a simple gravel wall, as the skeleton frame can be made use of in the erection as a guide to the mortar work. For a full account of the manner of constructing balloon frames, illustrated, see Tucker's Annual Register for 1862; price, 30 cents, post-paid. The balloon frame for all classes of buildings is stronger and *forty per cent. cheaper* than any other manner of framing. We have built many of the most expensive houses in the country in this manner. The challenge in the Annual Register to all mechanics and practical men in the country, to prove the contrary of the above assertion, has not yet been taken up.

A mechanic who would erect a building at the West in the heavy timber, mortice and tenon style, would be voted a fossil, and find his occupation gone—old foggy ideas in architecture, as well as in agriculture, being unpopular there.

Hutchinson Station, Ky. C. R. R., }
Jan. 2, 1865. }

GENTS.—Enclosed find two dollars. Send to my address the HORTICULTURIST for 1865, and turn all the unemployed German emigrants around you in this direction. We can give them all employment on Bourbon lands, good homes on productive soil, with every prospect of their comfort for the future. No fear need be entertained of guerilla parties where you are not in possession of a good horse. Respectfully,

WM. KENNEY, M.D.

Catskill, Dec. 16, '64.

MESSRS. GEO. E. & F. W. WOODWARD:

DEAR SIRs—Your note in regard to the Jonathan apples was duly received.

The more I see of the Jonathan the more I am impressed with its superiority. It combines more good qualities than any other apple I know of. In the first place (although rather a slow grower,) the tree will bear very young. Grafted on an old tree the third year will produce a good crop. Its extreme beauty is only surpassed by its excellent flavor. Although a tender apple, its keeping qualities are the best. It is good for table use now, and, if properly packed, will keep unimpaired until March. A few years ago I had occasion to clear out my cellar preparatory to getting in the fall crops, when in a barrel I found three Jonathan apples which had been there a year (although somewhat shriveled) perfectly sound.

If there is a fault about the Jonathan it is that it bears too full crops. My trees in many cases have been badly broken. This fall they presented a most beautiful sight, loaded to breaking with their brilliant fruit. The low habit of the tree is also a great advantage on account of winds, and also renders them comparatively an easy apple to gather.

Lastly, as a market fruit it is unsurpassed. My salesman has not for the last five years sold them less than four dollars per barrel, and this year he gets ten dollars (always from two to four dollars more than Spitzenbergs or Greenings.) I prophesy for this kind a wide popularity, not only with the consumers, who are governed by *appearance* and *taste*, but also with fruit growers, who always like to raise those kinds which are sure to produce well and regularly.

I have several Jonathan trees that this year netted me clear profits from forty to sixty dollars each. Most truly yours,

THEO. A. COLE.

Cleveland, 22d December, 1864.

GENTLEMEN:—Yours of Sept. 8, relative to notice of Grape Show was duly received. I regretted you had no notice of it, as the show was my own individual effort, and although it was a success so far as varieties on exhibition could make it so, yet to my pocket it was not complimentary. The ad-

interim Committee of our State Pomological Society, however, met there at the time, and held discussions (open to all) on varieties, &c., &c. All of which will in due time appear in the Transactions.

The Grape Subject is a very important one to Ohio and especially to the border of Lake Erie. There are now at the least calculation 4,000 acres in vineyard on the shore and islands, and individuals are making calculations to plant largely the coming spring. Companies are also forming and preparing to plant in tracts of 200, 300 and 400 acres each, at the rate of say 30 to 50 acres each yearly. Individual vineyards hereabouts, have this year paid their owners in fruit alone over \$1500 per acre, and as the supply increases so also the demand. I am now getting out a circular calling for a meeting at Cleveland on the 1st of Feb. or thereabouts, for the purpose of forming a State Grape and Wine Growers Association, to hold quarterly meetings at different points, for the discussion of soils, pruning, &c., and annually a show of Grapes and wines for comparison, &c.

We are but just learning of the wants of our native grapes, and all the old routine plans of pruning *vide* Mead, Grant & Co., are useless in vineyards of Catawba, Concord, Norton's Virginia, &c. Again all old stereotype ideas of having limestone soil, or wanting that, preparing it 18 to 24 in. deep and dressing heavily with lime etc., have got to be looked over with leather spectacles, for many of our best grown grapes this and past years have been on soils where hardly a trace of lime can be found and where no such preparation has ever been had. Animal manures are all bosh except to create long straggling growth of puny wood, keeping the vine growing so late that one fourth of the wood is green on approach of severe frost, while not one bud in ten is well matured.

I expect to see great changes in ideas respecting grape culture, soils requisite, &c., &c., during the next ten years.

When you are telling your readers about peach tree borers *Aegeria exitiosa*, say that

at any time before the buds swell in Spring, if they will take away the soil, baring the crown and upper roots, clean out the grubs and then swab all over, and 6 inches to a foot up on the body with coal tar, no borers will attack the tree for two years to come. The work however must be done while the tree is in its dormant state or the coal tar will destroy it.

Yours &c, F. R. ELLIOTT.

Warsaw, Ill. Jan. 6, 1865.

MESSRS. WOODWARD:—The January No. of the HORTICULTURIST came yesterday. I was most agreeably surprised, for I had been lead to believe that it would be of no value in future—at least, have been assured that such would be the case, by persons with whom I have done business—persons living in New York State. I have taken it for two years, and can safely say that, to my mind, this is a *far superior number to any of the others.*

On my sandy south-side hills, my Catawba vines produce better fruit and two weeks earlier than any other vines in this town. Will it pay me to ship the fruit to eastern cities for sale, provided I grow fruit of extra quality? What could I usually get per pound for Catawba, Diana, Delaware, Iona and Allen's Hybrid grapes—very fine? Where is my best market; or will it pay better to make wine? CHAS. J. MAY.

We give below the wholesale and retail prices from two well known reliable New York dealers in grapes. Catawba Grapes at 20 cents per pound and Wine at three dollars per gallon nett prices, would yield about the same profit, but as fruit is shipped at a risk, being perishable, &c. Wine would be most preferable in your locality; we would decide in your case to make wine and not rely on the New York market for sales of fruit. The Diana being a good market grape, a good keeper, &c., would pay well at \$1.50 per pound, even if it possessed all the faults of its parent. This would pay for rot, mildew, and an occasional worthless crop. If the Catawba does well with you, Diana will probably do better. The

Iona and Allen's Hybrid Grapes are not yet known in this market. That is, we have not been able to buy them nor find a dealer who has had them.

New York; Jan. 21, 1865.

GEO. E. & F. W. WOODWARD.

Gentlemen—No trouble to answer your questions. I will give you a complete detail from my books.

I will commence with Concord. The first I received was September 8th, and they sold for 50 cents. The next week they fell to 20 cents and continued at that price to October 8th, when they fell to 15 cents, and sold at that to November 12th, when they advanced to 20 cents and gradually disappeared from market the last of the month. These were the wholesale prices, the general retail price was ten cents advance on these. The first Delaware received September 10th sold at 75 cents, the next week they fell to 50 cents a pound, the next week to 40 cents, the next week, Sept. 28th, 25 cents a pound. Oct. 8th, 20 cents. There has only been a few lots in since they have been sold from 20 to 25 cents. They would bring 35 cents to-day.

Catawba Grapes have sold from 20 to 25 cents a pound the last season, up to the holidays. They are bringing 30 cents now in good order. Diana's opened at \$1 50 and fell off to 35 cents in August. There are few in now, wholesaling at \$1 50.

I have Catawba Grapes from August to March.

I have given you above the prices of first quality.—Respectfully,—JOSIAH CARPENTER.

W. & C. SMITH, wholesale and retail dealers in foreign and domestic fruits, 152 Broadway, N. Y., give us the following in black and white, as retail rates during the fall season, 1864: they have no grapes on hand at this time, January 18th.

Concord,	per pound,	40 cts.
Delaware,	"	40 "
Catawba,	" 30 to 40	"
Diana,	"	40 "
Rebecca,	"	40 "
Isabella,	" 20 to 25	"

Hartford Prolific, had none.

THE HORTICULTURIST.

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LACKLAND MAKES A BEGINNING.

My friend Lackland, as I suspected he would, has purchased a little place of two and a half acres, some thirty or forty miles from the city by the New Haven railway. He makes his trips to and fro with a little badly-disguised fear of decayed "sleepers" it is true; and suffers from the still more frequent embarrassment of riding upon his feet—all the seats being occupied and the company being too miserably poor to add to the number of their carriages. He was disposed to resent such things at the start, and even was stirred into writing a brief and indignant appeal to an independent morning journal; but upon being answered by an attorney for the company or a road commissioner, who called him names and abused him as if he had been a witness before a court of justice, he subsided into that meek respect for corporations, and awe of all their procedure, which are the characteristics of a good American citizen, and of most well-ordered newspapers.

New Yorkers learn how to bear such things; there is no better schooling for submission than a two or three years course of travel upon the city railways; Lackland is

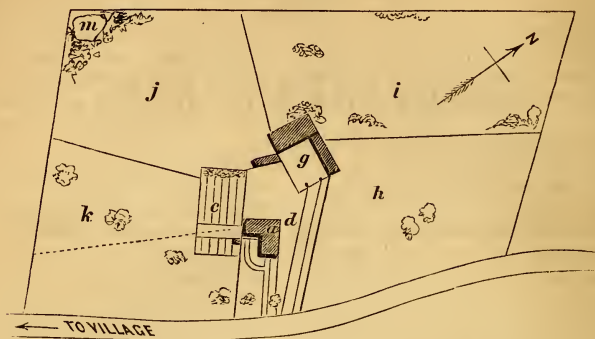
submissive. And after a fatiguing day in Maiden Lane, having come up Fourth Avenue with a stout black woman in his lap, he is grateful for even a standpoint upon one of the New Haven cars; and if some rough customer near him berates the company, alleging that "these ere railroad folks don't care much about a feller's comfort, so they gits his money," Lackland shows a sickly smile of sympathy, and—looking about him to see that no conductor or possible director is within hearing—says meekly, "no, they don't."

But this is all by the way.

My friend Lackland, has as I said, bought a small country place within a mile of village and station, for which the purchase-money in round numbers was six thousand dollars. A certain proportion of this sum was paid in view of a projected horse railway, which is to pass the door, and to unfold building sites over his whole area of land. As yet, however, it is in the rough. There is indeed "a brand-new house upon it—two stories, and only three years built," as he writes me, "with ell wash-room, and all well painted with two coats of white

lead. The property is distributed into six different enclosures, of which I send you a draft."

And herewith I give the exhibit of Mr Lackland's little place with its condition at time of purchase.



"You will observe" he continues, "that there is rather a cramped aspect about the door-yard and entrance, these being hemmed-in by a white picket fence on either side and in front. It is unfortunately the only sound fence about the premises; the garden (*e*) showing a tottering remnant of one of the same pattern, and the other enclosures never having boasted anything finer than "posts and rail" fixtures, with a half-wall to prop them, upon some of the exterior lines. The enclosure (*d*) is what the previous owner called his back-yard; it was traversed, as you see, by a cart path leading straight to the barn court, and was encumbered with a prodigious array of old wood, brush heaps, a broken cart or two, and one of the most luxurious thickets of burdock and stramonium which I ever remember to have seen. He (former owner) tells me stramonium is good for 'biles.' Is it?"

"The buildings around the little enclosure marked (*g*) will explain themselves—a barn, a hog pen, a cow-shed—all in most dilapidated condition, so much so that I shall have to make a new investment in the way of stable room. There is the remnant of an old orchard upon the plot marked (*k*) with only three or four ragged and disor-

derly looking trees; at (*j*) again, there is a patch which has been in potatoes and corn for an indefinite number of years, and which has a terrible bit of ledge in the corner (marked *m*) overrun with briars and stunted cedars, that I fear, will cost a round sum to reduce to a level. The fields (*i*) and (*h*) are pieces of mangy grass scattered over with occasional bushes, but I do not despair of putting a smooth face upon them. The only view from the premises that is worth considering, is rather a pretty one, (indicated by a dotted line) of the village spire, and a few of the village roofs peeping out from the trees, and back of them a glimpse of the Sound. I send a rough sketch of it.

"But the misfortune is, the view is only to be seen to advantage from my wash-room door, or from one spot in the garden just now encumbered with enormous Lawton briars. The first position is soapy and damp for visitors, and the last—tedious.

"What I wish of you,"—my friend Lackland continues to write,—"is to give me a hint or two about the combing of this rough little home of mine into shape. And in order to a more definite understanding I will tell you briefly what I *don't* want, and next what I *do* want.

"And first, being a plain man, I don't want crooked walks, for the mere sake of having them crooked; I don't want to go into my gate in a hurry—when I know dinner is already smoking on the table—and yet, after entrance, be compelled to describe a circle planted with I know not what barbarian evergreens, before I can get to my door.

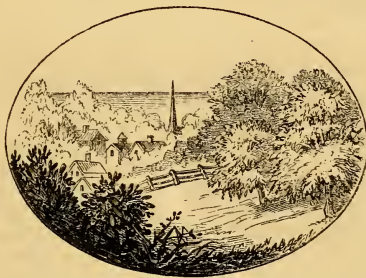
"I don't want my stable yard absolutely in sight; least of all do I wish to be compelled to traverse it, before I can get sight of my pet mare.

"I don't wish a carriage drive to my door-step, when my door is only fifty feet from the road by a tape-line.

"I don't want to pull down or to move the present house, because in so doing I should sacrifice a capital cellar, which I must do the previous owner the justice to say, has been capitally arranged.

"I don't want such a great array of fences; I don't want a labyrinth of walks; I don't want my garden so near the street as that chance passers-by shall see me in my shirt sleeves and hail me with: 'Hallo! Squire, what you goin to ask a peck for them pas'nips?'

"I *do* want a little of good elbow room about the house and entrance as if I were not in momentary fear of an incursion of pigs from the back yard; I do want a gar-

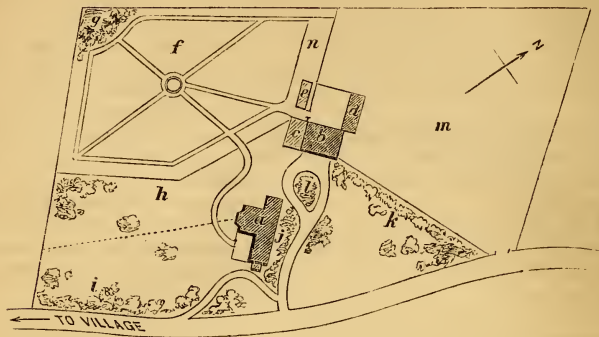


den of somewhat larger area where I can grub away at my will; and if you draw me a plan, put at least a fourth of the whole land into herbs and garden stuff. I want the view kept of the village spire, and the back ground of sea, and some lounging place from which I may look upon it at my leisure. I want a poultry yard of such dimensions that I may count upon a fresh egg every day to my breakfast; I want provision for a salad on Easter Sunday; and if you could contrive me some cheap fashion of a cold grapery to try my hand upon, I should be thankful; only let it be so situated that I may, (if grapes fail) turn it into a winter

room for my hens. I want you to tell me what I can do with the rock I must blast away from the ledge in the corner of the potatoe patch. I want something I may call a lawn—to satisfy my wife's pride—and a bit or two of shrubbery in it. But above all, I want at least a third of the land in good wholesome greensward, with no encumbering trees—whether fruit or exotic—where I may turn my mare to a run, or play at base ball with my boys, or cut a bit of hay, or—if the humor takes me—try my hand at a premium crop of something."

Upon this I made a little study of Lackland's plot of land and furnished him with this design.

And I furthermore said to him, your ledge (which I have marked *g*) is one of the most picturesque features about your place;



so I have thrown it boldly into your garden, in such way that it will be in full view from the gate, and I advise you to cherish it—to plant columbines on its ledges, and your Tom Thumb geraniums along its lower edge, in such sort that in autumn they will seem like a running flame of fire skirting the cliff and blending with the crimson verbenas upon the circle in the centre of the garden. In (*f*) you have a map of your work place, and to make the privacy of it entire, you may plant a hedge for a barrier along the line (*k*) or you may set a trellis there and cover it with vines. At (*e*) you have a hot-bed to provide your Easter salad, and you may multiply the hot-beds if you like along the border (*n*) which is made under shelter of a high fence to the north. At (*c*) you have your cheap grapery built against the south-side of the barn, and convenient for the transmutation you suggest; at (*b*) is your stable, and at (*d*) your poultry house with a sunny stable court to the south of it. At (*m*) you have your paddock for the mare, or your mall for base-ball, or your plow-ground for a premium crop—utterly free from shrubbery, and communicating with barn and with street alike. The lawn explains and describes itself; but

I would only suggest that the shrubbery marked (*j*) will be a capital spot, under shade from south, for your Rhododendrons*, and the circle (*l*) I would advise you to fill with a dense coppice of hemlock spruce to break the wind from the north. Along the border marked (*k*) you can either plant apple trees, and at fifteen feet of distance a thicker line of dwarf pears (being careful to trench or subsoil the ground), or you can stock it with a protecting belt of evergreens. In either case, give thorough cultivation, if you wish the best results.

At (*a*) is the “brand-new” house remodelled in such fashion that you have a southern porch, a kitchen in the rear, and

* I observe that your correspondents “G” and “H. W. S.,” have discussed the method of isolating a border of rhododendrons from the influences of a forest screen to the south—one suggesting simple amputation of the roots of the trees forming the screen, and the other the interposition of a wall. The last is expensive and the former liable to be neglected. An open ditch, some two feet deep by eighteen inches wide, I have seen most effectively employed for the end proposed, by a very successful southern horticulturist, who succeeded, year after year, in securing a magnificent bloom of some ten or twelve varieties of Azaleas, within twenty feet of gigantic cypresses and magnolias. The ditch may also serve as a convenient receptacle for leaves and the rakings of the borders.

a bay-window in your dining-room, which commands (by the dotted line) the same view which now wastes its charm upon the stout woman at your wash-tub.

It is possible that my friend Lackland may report progress to me some time in the course of the summer.

EDGEWOOD, *Jan.* 1865.

A CHAPTER ON ORCHIDS.

BY ORCHIS.

Continued from February Number.

BUT the beginner in orchid culture must first obtain his plants—by no means an easy matter. The prices of all orchids are high; all that are worth growing are expensive, and in this country there are no large sale collections.

We may, however, obtain from many of the florists in the vicinity of New York a choice collection of the Mexican and South American orchids, but if a grower would indulge in East Indian epiphytes to any extent, he must import them from England or the Continent.

A good way to obtain a stock of Mexican or West Indian orchids is through some friend in those countries; they will generally arrive in good condition, but for one worth growing, the importer will find at least a dozen perfectly worthless.

The treatment of orchids, on arrival, is very simple. They should at once be carefully examined, and all dead or decaying roots, and all diseased, pseudo bulbs be removed with a sharp knife. The plants should then be laid upon damp moss in a shady part of the orchid house, in moderate heat. As soon as any of them show signs of growth by the budding of eyes at the base of the pseudo bulbs, they should be potted, or basketed, or fastened to a block, according to the nature of the plant, and be moderately watered until active growth begins, when more water may be given and continued until growth is completed, when the plant should go to rest. The after treatment should be the same as that accorded to established plants.

A long time may often elapse before the

production of buds, but as long as the pseudo bulb remains fresh and green, there is hope of producing a plant.

If a portion of the pseudo bulb is decayed, that should be cut off, and all fresh cuts be rubbed with powdered chalk or flower of sulphur, which will dry up the wound and arrest the progress of decay.

Eyes, or buds, are often produced from a piece of the bottom of a pseudo bulb; sometimes, though rarely, from the top, when the bottom is cut away.

Terrestrial orchids should be potted as soon as received, but the earth should be only kept damp till they show signs of growth, when water may be more freely administered.

Potting is a very simple operation. The pots should be clean and proportioned to the size of the plant; over-potting is always injurious. The first requisite to be secured is good drainage; indeed, this is one of the most important elements of success in orchid culture; for without it the plants will not thrive; orchids are more impatient of standing water at the roots and of a sour, heavy soil than any other plants.

If the pots are large enough, it is well to invert a small pot inside of the larger one, and to fill around this with broken pots-herds; if the pot is small, broken potsherds alone suffice; over the potsherds spread a layer of moss; the pot should generally be two-thirds filled with drainage; and then fill in the pot with pieces of peat, varying in size from a marble to a hen's egg, according to the size and requirements of the plant, mixing in moss and pieces of pots-

herds, if required. Raise the soil about an inch above the pot, sloping it up from the rim gradually; and on the mound thus formed set the plant, securing it by little pegs; the roots will soon grow and sustain the plant. The moss used should be the white sphagnous species of meadows; if this is not procurable, coarse wood moss will do.

Terrestrial orchids need a stronger compost than the epiphytal species; a mixture of peat, leaf mould and well-rotted cow-manure, with good drainage of potsherds covered with moss, suits such species as *Bletia*, *Cypripedium*, etc.; care must, however, be taken not to have the compost too fine, lest it become sodden.

Such plants as *Cyrtopodiums* need a coarse compost of peat and turfy earth, with an admixture of drainage.

Plants in baskets should be more lightly potted than those in pots, and as many send their flower spikes down through the bottom of the baskets, care must be taken that no coarse drainage material arrests the downward progress of the spike, and thus causes it to rot off.

Baskets for plants of this nature should be rather shallow, be lined with moss, and filled with a potting material of moss and peat.

Orchids grown on blocks require more care than those in pots and baskets in regard to water.

They should at first be bound on to the blocks with copper or lead wire; as soon as roots are produced, they will cling to the block and hold the plant, and the wire may then be removed.

Lelias, *Phalænopsis*, *Barkerias*, *Sophrornitis*, many *Cattleyas*, *Dendrobiums*, *Epidendrums*, and numerous other species are best grown on blocks. During the growing season it is often well to bind a little moss round the blocks, because if then the plants become very dry, they may be seriously injured; this may be removed when the plants should go to rest.

The wood for blocks should be cork, locust, apple, plum, oak or elm; the blocks should be well seasoned.

Where plants are imported growing on branches, they should by no means be removed, as they flourish much better on the wood upon which they naturally grew.

Baskets may be made of strips of cork or rods of hazel, maple, or willow.

The rule has ever been given that all resinous woods should be avoided, but we have used baskets made of the ends of spruce poles without any bad effects.

Baskets may also be made of galvanized iron wire, and if the patterns are well chosen, are very neat and pretty.

Water used for orchids should always be of the temperature of the house. To obtain this, it is necessary to have a cistern in the house, which should be supplied with water from the roof, as rain water is most suitable for the plants. A good place for this cistern is under the central table; or a narrow cistern of slate may be constructed all around the front of the house just above a line of hot water pipes, by means of which the water is always of a suitable temperature for watering. If a cistern cannot conveniently be constructed, large tubs should be placed in different parts of the house and kept filled with water; these are also very useful by supplying moisture to the air by evaporation. Water should never be given on dull cold days, and very little at all in winter, except to plants in growth. During the growing season water should be freely administered, both at the roots and by the syringe, but care must be taken not to wet the young growth or flower-buds enough to cause them to damp off.

Twice a day will be often enough, however, in the hottest weather: once about eight o'clock in the morning and again about four in the afternoon. As a general rule, the house should be dried off by ventilation once a day.

Plants on blocks and in baskets should be dipped and allowed to become thoroughly soaked when in growth; but when at rest they should have only enough water to keep the roots and pseudo bulbs from shrivelling. If a syringe is used, it should

only be during the summer or growing season, and it should be so managed that the water may fall in a fine mist or shower over the plants.

We have said that orchids require a season of rest. In their native countries there is a period during which they can receive no water—the dry season. At this time the bulbs ripen and the plants are fitted for the production of flowers, and thus to ensure fine flowers, rest must be given for a season.

If the same heat is always maintained, and constant moisture afforded, the plants will continue growing, producing weak second growths and few and inferior blossoms. A ready way of securing this rest is to remove the East Indian orchids to the Mexican house during their resting season, that is, after they have perfected their growth, and to remove the Mexican orchids to the green-house. During the resting-season the plants may have more sun, and should always have a free circulation of air around them, being always mindful that cold draughts are injurious.

As soon as the plants again show signs of growth, they may be removed to their respective houses, where they will soon shoot into growth and flower.

When the plants are in bloom, the duration of the flower may be prolonged many days and often weeks, by placing them in a cool house, and being very careful that no water touch the flowers. The duration of the flowers of orchids is remarkable, many lasting in perfection from three to five weeks.

There are some East-Indian orchids, such as *Phalænopsis*, *Ærides*, *Vandas*, etc., which grow perpetually, but these should be removed for a season to the coolest part of the house and the growth checked somewhat, as in many cases if kept in too active growth the plants are injured.

The heat of the house must vary much with the different seasons, and in the different houses. The different degrees of heat required are well shown in the following table from an English work :

EAST INDIA HOUSE OR STOVE.	F A H R E N H E I T .			
	Day with sun.	Day with- out sun.	Night.	Morning.
Spring.	75	70	60	55
Summer.	85 or 90	70	65	60
Autumn.	70	65	60	55
Winter.	65	60	55	50
.....				
MEXICAN OR COOL HOUSE.				
Spring.	70	65	60	55
Summer.	75	65	60	55
Autumn.	60	55	50	50
Winter.	55	50	50	45

Orchids should be kept clean. This is easily done by washing the pseudo bulbs and foliage with a bit of sponge-dipped in very weak soap suds ; care should be taken not to bruise the leaves.

The insects which infest orchids are scale, mealy bug, and red spider, and the remedies are the same adopted in green-houses for their destruction.

Cockroaches and woodlice, which devour the tender shoots, the young flower-buds, and the new roots, are easily destroyed by means of the old trap of a turnip or potatoe hollowed out ; the insects seek the trap, and are easily destroyed.

Red ants may be trapped in the same manner by an apple hollowed out and placed on the shelves. Cockroaches may also be hunted at night with a lantern. If the shelves are arranged hollow, so as to hold water, there will be but little trouble from these pests, as the water will prevent their gaining the pots. The plants should also be potted as before directed, by inverting a small pot inside of the larger one, which renders the drainage more difficult of access to the insects.

Within the last few months an entirely new theory of orchid culture has been promulgated in England, known as the “cool treatment,” and thus far the practice has been so successful that if future experience confirms the probable facts, we may look for an entire revolution in the culture of this family of plants.

The main fact upon which this theory rests is, that orchids have hitherto been kept too hot, and that most species

may be grown and flowered successfully with no greater degree of heat than we ordinarily keep up in our heated graperies.

As yet it is too early to pronounce upon the complete success of the experiment, but the reports of English amateurs who have given the plan a season's trial are universal in its favor.

By maintaining a comparatively low temperature, most of the Mexican orchids, and not a few of the East Indian species have been flowered quite as successfully as under the former high pressure system. It is also worthy of notice that this experiment has been tried in heated graperies, where the main object was to secure a crop of fruit, which has been fully accomplished, and both fruit and flowers have done well. This dis-

covery opens a new era in orchid culture; hitherto it has been deemed impossible to grow grapes and flowers in the same house without detriment to one or the other, but if we can, not only force our grapes, but with very little additional trouble obtain the gorgeous blossoms of the orchid family, the discovery is one of the highest interest both to the florist and horticulturist. The decreased expense is also a great recommendation, for the cost of orchid culture has always been a great obstacle to its successful prosecution. We propose, at an early day, to lay before our readers a full account of the experiments on this subject in England, to do which we only wait to ascertain a few more interesting facts:

To be continued.

OUR METHOD—NO. II.

BY PRATIQUER.

THE grape culture according to "Our Method" is not a humbug—though we may be able to indicate practices connected with it that strongly point that way. Good plants can be purchased—probably as cheap as they can be raised, and we must be willing to pay a fair price for them, considering it a good investment at the outset. In this way, we shall to a great extent, eradicate the evil alluded to. As we are now ready to plant the vineyard, we have no time to raise our first plants, and we sally forth to buy them. Like the ancient Cynic, we seize our dark-lantern and seek to find an *honest* man to deal with.

The custom with tradesmen the world over, is to display the poorest quality first, and we patiently submit to an examination of the stock, wondering how any one could have the patience to cultivate, and the effrontery to exhibit for sale such miserable apologies for the grapevine. The merits of the *Invisible* whose tops are imperceptible to the naked eye, but are said to have *well ripened roots*—the compactness and lightness of the *letter-envelope*

—the delicate and miniature appearance of the *knitting-needle*; and finally, the vigorous and wire-like properties of the *crow-quill* are dilated upon with an infatuation and impudence which ought to make a common, false-pretence-man blush. The plants, in the order named, represent inversely, the kinds sometimes offered for sale as No. 2, No. 3, No. 4, &c.; but would be much more truthfully expressed by the following arithmetical signs No. ,2 ,03 ,004 as representing the proportions they really bear to good No. 1, plants. The term "A No. 1" and "Extra" and "Special" are simple exaggerations intended to represent them greater than they are, and should be disused. Hyperbolic in description, and homœopathic in quality, are equally unsuited to grape planting?

There are but two grades of grapevines; number and select them as you will; one of which is worthy of cultivation—the other *is not*. Dealers who sell the latter in this age of intelligence, for vineyard culture, should be held to a rigid accountability before "an enlightened and intelligen

jury." Think of six years of one's life wasted before the injury can be ascertained fully, and *begun* to be repaired, to say nothing of original outlay, labor, interest and disappointment for which no money can compensate! It is quite time that this disgraceful traffic should be characterised by its true name FRAUD. But let us enquire if the penny-wise and pound-foolish planter, unwilling to pay the cultivator a fair price for his labor, may not be a party to the swindle? *He buys refuse plants to save money*, because they are *cheap*, and the nurseryman keeps "a choice assortment to suit customers." Is not the buyer then open to indictment by his wife and children, as much as if he spent his estate at the tavern or in riotous living.

The *Crow-quills* are the only one of the plants before named, that are to be tolerated, and even these should be cultivated and nursed another year or two before planting in the vineyard. We know of at least three vineyards, planted with these vines, not five per cent. of which survived the first season; and we must be permitted to enter our solemn protest against the sale and against any attempt to plant them, except in the nursery.

We need no experiment to test the longevity of the grapevine, like that of the eccentric Englishman, who bought a Raven to see if it would live seven hundred years! We know that we plant for posterity as well as for ourselves. So let us begin right.

Those who follow "our method" will buy none but the best (goose-quill) plants that can be procured for a fair consideration, feeling that the investment is as safe and productive as a seven-thirty.

Our preference is *first* for well ripened plants, grown from single eyes in pots under glass, as having the finest development of roots, and a growth and maturity nearly equal to two seasons in the open air. But we protest against the sale or purchase of pot-plants from green cuttings, until they have had a second years nursing.

Second—Layers from strong canes of ripe wood, the parents of which have been in the

open ground upwards of two years; the new plants to be restricted to two or three from each cane so laid down; to be cut loose from the parent and each other at the end of the season; and allowed to *root on individual account another year before transplanting*. This is the only way that a layer can become as good as a pot-plant for a vineyard. Separation of a layer gives it a severe check—cuts off its original supply of subsistence and weakens its energy, if at the same time we transplant it the loss of power is too great to ensure its future vigor. Novices have a great desire to plant layers; they look at the *lead-pencil* canes as indicating early fruit bearing; force the plant to produce a premature bunch or two of inferior fruit, and thus destroy it. Such treatment in grape culture is rank heresy. Under no circumstances should the vineyardist allow his best vines to ripen fruit before the third Autumn, and then the clusters should be very few in number.

Third—Cuttings grown in mellow soil, to be at least two years old when transplanted; they are rarely fit to be removed at the end of the first Summer. The buds containing the rudiments of the future roots and leaves have a severe task to perform—exhausting much of their inherent power *to live*, and producing feeble roots and cane. If we add to this, the exertion to sustain life on transplantation, in a new situation, we may feel sure that we have a sickly plant to look after in the future, and need not wonder to find the mildew (*Botrytis*) one of its most familiar companions. This disease, of which we shall say more in its place *has its origin in the incipient cultivation of the grape*. No man should plant it in his vineyard; yet every cultivator does so, when he sets out immature, feeble or unhealthy vines. This is a matter of vastly more importance than many imagine, and we wish to lay great stress upon it.

Provided with plants of a *good quality* we proceed to cut the canes which ought to be of the size of a goose-quill at least, down to three eyes, only one of which is to

be allowed to grow, the other two being retained to form a top in case of accident. We also prune the roots of all dead portions, cutting-in long, straggling and injured parts with a sharp knife; but we caution the inexperienced against cutting off much of the roots—root-pruning may be overdone. An enthusiast in this line, will very soon reduce a good goose-quill to a letter-envelope vine, which is about equal to destroying it altogether. *Diminuendo* is a musical term, inadmissible in grape planting.

Before planting, each root should be immersed in clay and cow-dung, mixed so as to form mud that will stick to every root without fastening them together—these are then removed into a basket and immediately covered with wet straw or a damp mat, and carried to the vineyard; the air is thus kept from the roots while the planting progresses, and the mat prevents their drying in the sun. The places for each vine having previously been indicated by a peg from the basket, and the holes dug two feet across and one foot deep, in well prepared soil, we first fill in a mound of earth in the centre and holding the plant in the left hand, place it carefully, spreading out the roots, pointing diagonally downwards with the right hand, while the assistant sprinkles in mellow surface soil enough to cover and retain the plant in position. We then proceed in the same manner until the whole are planted, and then fill the holes to the collar of the vine, which should be three or four inches below the surface; the remaining space is left to be filled up the following Autumn.

We sometimes think that instructions in grape culture should be of a negative character—that what *not to do* is most important to cultivators. The newly planted vine must *not* be moved after it is once placed and covered. It must not be planted in wet weather, nor in wet ground, nor covered too deep. Probably the greatest error committed by planters is this. We were lately called on to sympathise with a friend who purchased eight hundred good

plants two years ago, which he said did not do well, the cultivation was correct, but they died; and we could find only thirty-four plants out of the whole number living. *They had been planted too deep.*

Having planted our vineyard, say in November, 1864, or in April, 1865, we propose to “let it alone” the first Summer, except to tie the canes as they grow to a stake set at the time of planting, and cultivate parsnips, carrots or potatoes, between the rows, keeping the ground mellow and free from weeds. After the canes have become fully ripe, we cut them down to three eyes, about the first of November, 1865. We then spread about them coarse litter from the barnyard, (to be dug in next Spring,) and raise over them a mound of earth, taken from between the rows, several feet distant from the plants, this protects them during the first Winter. We consider the vine in this condition, as yet in its infancy—still requiring tender care, having had the double duty to perform—to live and to grow. If it has survived, it may be supposed to express itself in the language of the Freedman: “If I lib troo dis Winter, I lib alway.” This treatment is suited to all the States north of the Potomac, and is not unworthy of consideration among “our wayward sisters,” whom we yet hope to see living in a restored Union, under their own vine and fig tree, with none to make them afraid.

It is now proper to settle the *age* of our plants, so that we may clearly understand what is meant by the first year, second year, &c., and thus avoid confusion and misinterpretation of our meaning. We frequently hear plants spoken of as four and five years old that have been set out but a year or two. All grape vines before planting, whether one, two or three years old, are reduced to the condition of one-year-old plants when removed, as they are cut down to three eyes and are subjected to the same treatment. But when they are re-planted they are reduced again, and are to be rated as commencing life from

thenceforward, except that vines planted in the Fall of 1864, are rated the same as those planted in the Spring of 1865, becoming one year old in the Fall of 1865, and so on. Thus, after the ripening of the wood and fall of the leaf, in the Autumn of 1866, they are two years old. If planters will remember this they will better understand the directions given for the culture of the vine.

As yet we have said nothing of the kinds of vine to plant. On this point we shall doubtless "knock noses" with some of our dear friends, whose speciality runs on other varieties—even at the risk of a newspaper quarrel, a modern improvement in advertising, neither original nor patentable, but much in vogue of late. Having no

grapevines or opinions for sale, we shall fearlessly do our duty, even if we have to take our National-Premium Catawba *privately* with Messrs. Z. Y. & X. A very sensible writer in a late number of the *Country Gentleman* sets down the quality of grapes for eating, in order, thus: Allen's Hybrid, Delaware, Diana, Creveling, Rebecca, Concord, &c. We divide our vineyard into three parts, distinguished by the color of the fruit, and give our preference, for the white or green, to the Allen's Hybrid; for the red, to the Delaware; and for the black, to the Creveling; these are without doubt, at the head of the list, and will be for many years to come. When either is superseded by a better, we shall welcome it with open arms.

GRAPE CUTTINGS FROM HISTORY.

BY JOHN S. REID.

NOTICING the very handsome compliment which the Editors of the *HORTICULTURIST* pay to themselves and the contributors of the January number, in the Editors' Table, I could not do less than, as one of its contributors, look round for a new theme to write upon, which would of itself sustain the eulogy of the compliment, and afford amusement if not instruction to the numerous readers of the journal, hence the heading of my present article, believing that my *own* experience would not supply the demand.

The history of the past is like a beautiful stream on which may be seen the actions of a by-gone world, where resting on its bosom are seen the flowers and weeds of life—where the bud, the blossom, and the fruit may all be found grouped together; and where the sweet and the bitter may be found side by side, labeled and marked in the nicest order.

When a boy, I was often astonished at my own want of knowledge of the beauties of creation, and especially of the vegetable

world—and since I have become a man, my ignorance outcrops at every point of my investigations, like the geological formations of a former world.

Having no training in my early youth as a Horticulturist, I have often had to grope my way in the dark, relying upon the opinion of some other, who pretended to know all that I wanted—but whose knowledge, when tested by the light of science, proved to be utterly incompetent to give the advice required; hence I examined the silent, but instructive mementos of the past, and now send to you, what I call—"Grape Cuttings from History," as the result of my labors, hoping that they may prove instructive to those who are as ignorant as I was; not intending them for those who may consider themselves the "Masters" of Horticultural Science.

I like the idea presented by Mr. Fuller in the January number, where he ruminates as one may term it, over the glorious hopes and fond anticipations of his seedling vines; for I well remember how

anxiously I have watched the first development of the young germ as it burst from the seed envelope and shot out its tiny thread to the sun and air; how each morning and evening I had examined it again and again, until the blossom would appear on the vine, and the fruit-clusters hung pendant to the ground—then how anxiously did I look for the coloring process, whether white, green or red; and then, when the fruit *should* have been ripe, and luscious to the palate, how disappointed, to find it “sour as grapes.” All this I have felt and experienced, and can well mourn with him over his lost anticipations; whilst continuing in the fond attempt of obtaining something that yet may repay all my experiments.

But enough of this for the present, and let me hasten to my “Grape Cuttings” for fear they, like many others, get dry before planting.

The earliest account we have of the cultivation of the vine, is found in the sacred text; for which see Genesis, 9th chapter, 20th verse. “And Noah began to be a husbandman, and planted a vineyard.” Now we are not informed as to the kind or quality of the grapes he planted, but they were such as made good wine; for the country in which Noah then resided is supposed to be near the city of Erivan in Armenia, a land still famed for its grapes and wine. This vineyard then, may be placed in about latitude forty degrees north, not far from the Black sea, and south of the Caucausus mountains.

Methinks I see the ancient Patriarch standing on the top of Mount Ararat, and viewing the wide desolation of a deluged world. There on that lonely mountain, with his small family, he gazes over the wide waste of waters, as they gradually retire from the summits of the mountains, gather in the deep valleys—and roll away far into the gulf of the Mediterranean. By and by the dry land appears all around him, and he brings out of the Ark the seeds and plants and fruits which he had gathered before the great flood had poured its

waters over the land, and he becomes a husbandman, and plants a vineyard on the slope of the mountain, and prepares to enjoy once more the luxuries of life.

Now we do not pretend to know the *kind* of grapes that he planted; although some ancient writers contend that *they* do; but we will suppose that they were the choicest and most delicious known to the antediluvian world—and we may fancy that he selected the white grape of Kishmish, the golden colored Mahoni of Cushbin, and the royal black Shiraz, of Samarcand. Or in gathering his treasures, he may have come across some of the finer grapes of ancient Egypt, such as the gray Tarniotic, or the rich and aromatic Meroc, which long afterwards Cleopatra presented to Caesar at the feast of roses, and from these filled up his collection. It is true, some writers contend that Adam knew all about grapes and wine, and that among these several fruits created by the Almighty, the grape was one of the first; whilst others assert that Adam knew nothing of either, else Noah would have known the effect that wine would have had on him, and not drank to intoxication; but this, like a great many other things, connected with ancient history, must remain in doubt, although my own opinion is that Noah was personally well acquainted with the Vine, prior to the deluge; and therefore very soon after, he planted the vineyard spoken of in Holy Writ.

Perhaps there is not another plant or shrub that claims so great an antiquity as the grapevine. Among the ancient writers of profane history, some assert that Osiris introduced the art of making wine into Egypt, whilst the Greeks claim that Bacchus was the father of this glorious beverage; but it is evident that the Egyptians were well acquainted with the use and properties of wine at least fifteen hundred years before the birth of Christ; and if we take the historic account of Joseph's dream, as found in Genesis, as an evidence of the cultivation of the vine—then the Egyptians were vine-dressers at least eighteen

hundred years before the Christian era. The chief vineyards of the Egyptians were planted on the banks of the Nile, although grapes are found on the shores of the Levant, the wine of which is of excellent quality, of a delicate perfume and an agreeable sweetness. The Chinese also claim precedence in the cultivation of the same—and refer to their ancient records for evidence of this fact; so that if they are to be believed, vineyards were under cultivation at least one thousand years before the birth of Christ.

The Chinese generally put their wine into pitchers, under ground for keeping—and several provinces of this Empire are celebrated for their grapes, wine, and raisins. History does not inform me of the several kinds in use in the vineyards of the Celestials, hence I cannot say whether they rival the celebrated vines of Europe or not; but it is evident that the quality must be good—or the raisins and dried grapes, which are largely sold and used by them, would not hold the rank they do among their historians of ancient and modern times.

Here my scissors begin to inform me that

they are getting dull, and that I have cut enough with them for the present; and being afraid that my researches *may* not be so interesting to others as to myself, for the present I will close with a promise to continue them if found either instructive or amusing.

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CUTTINGS FROM HOME.—For the past two months Winter has held this part of the country in his chains of ice and mantle of snow. The weather is extremely cold, and I am afraid that our finer fruits are seriously injured—for the snow is of that quality that falls in the nature of sleet and mush-snow, clinging to the vines and branches and destroying the buds.

But the world is full of pleasure and happiness, for I hear the merry laugh of youth mingling with the music of the sleigh-bells—notwithstanding the inclemency of the weather. So in patience we must possess ourselves, waiting for the glorious sun of April and May, when the young buds will awaken, and the song of the turtle will be heard in the land.

Fayette Co., Indiana, Jan. 22, 1865

NOTES, ETC. ON JANUARY NUMBER.

IN Mr. Buchanan's remarks on the Grape he says, little wine is made from the grape grown on the shores of Lake Erie. To a certain extent his remark is correct, as is almost everything of Mr. Buchanan's writing, but while this shore has now about 4,000 or more acres in vineyard, the quantity of wine made will probably average over 400,000 gallons, or over 100 gallons to the acre. Some vineyards do not sell any of their fruit for eastern shipment, and others again sell all of their fruit to parties who buy only to make it into wine.

PAGE GRAPE.—Will Mr. Reid give us a full description of this grape, its time of ripening as compared with Isabella or Catawba; size of bunch and berries; hardi-

hood of vine and where it is grown, except his own grounds.

IONA GRAPE.—Mr. Fuller says color and *size* similar to Catawba. He must have had some stimulating *Mead* in his spectacles when he saw the fruit, or the Ionas shown him must have been different from any the writer has seen. Two-thirds as large as Catawba and not an average of quite two berries to three of Catawba on the bunch, is about all that Iona will stand, as shown by those most interested in its present dissemination.

A WHITE GRAPE.—Mr. Fuller should try "Lydia," and he will find the desideratum he asks for, and which is to ensure the grower a fortune. Had this grape emanated

from the East it would long ago have had a first place, but unfortunately it started at the West, and it takes about ten years from the time a fruit is noticed at the west before some eastern fruitmen can recognize it.

PRATIQUER—in speaking of wine making, evidently loses sight of the acids in the

grape. If he will look that matter up carefully he will find it has as much or more to do with wine making than the sugar. What is now wanted is a simple instrument to detect acids as the Saccharometer does the sugar. E.

GRAPES IN ILLINOIS,

BY J. T. D.

To the writer of this article, in common with many other grape culturists, the past season has developed much in relation to the Delaware, which for many years has been enshrouded in doubt, if not altogether veiled in obscurity. Some fifteen years ago a few vines of the Delaware came in my possession, and fruiting some three years later, their high flavor, added to the most unexceptionable general good quality of the fruit, arrested my particular attention, and led me at once to the conclusion that it could be no other than a foreign plant whose habit and constitution had accidentally, or otherwise, found congeniality of soil and climate in its transatlantic home. The wonderful hardiness of its vine, and its early ripening, caused me, the second year of its fruiting, to plant all the seeds which from their well ripened condition I inferred, would answer the end I had in view. From that period till the last summer, these seedlings, so numerous as to excite the wonder, (and perhaps a feeling less creditable to myself,) of nine tenths of all those who were in the yearly practice of visiting my grounds, have received my constant care, and attention; cuttings, and layers were often taken from the most promising, with a view of sooner getting specimens of their fruit, and at the close of each year they received the usual winter protection given to all my vines. During the last summer, all that were not previously discarded as worthless, have fruited in abundance, producing many varieties of size, and some variety of color, but almost invariably of a uniform native

flavor, in which not the slightest trace of the foreign grape could be discovered. Three fourths of all these seedlings had the leaf green above and smooth below, of the "Clinton" and that class. Of the wood the same tough, close short joint which belong to the parent, appeared in many. Among them all, there was not one which in point of merit as a table grape approached the Delaware. There are but three or four of equal merit with the Clinton and one of these I cannot, without difficulty, distinguish from this grape. The time of ripening, size, color and flavor of the fruit, as well as its general habit of vine and leaf being well nigh identical; another remarkable trait of these seedlings is their almost uniform dark color, having all varieties of black, blue black, with and without bloom, not over a dozen being of the pale green of the golden Clinton, and not more than fourteen approximating to the color of their parent. All those which fruited first, or earliest, are the least promising grapes; those that did not fruit till last year are of a class decidedly superior, though not enough so to make it an object to propagate from them, with any view of introducing a grape worthy of general dissemination. Now, if the reader will bear in mind that the fruit from plants of the seeds of Allen's hybrid closely resembles either that of its foreign or native parent, sometimes like the hybrid partaking of qualities of both parents, and that the seeds of all the foreign varieties planted out doors or such as will survive out door cultivation till fruiting, show beyond all

question not only their foreign origin in taste, size, color and flavor, but also their utter inability to withstand the severities of our climate, he will with me arrive at the conclusion that the Delaware is a native, purely a native, having had its origin north of the isothermal line which limits the growth of our southern varieties and probably somewhere near the northern limit of the vine culture. I have often read in the writings of our amateur pomologists, and heard it asserted, that the Delaware has, by cultivation changed its original quality, and greatly improved; this of course can not be strictly true of any vine or tree, for the cutting or graft must always be precisely the same in all its constitutional properties and conditions, as the stock from which it is taken, but no doubt can exist in the minds of any that difference of soil and of climate and of cultivation may produce a difference in the fruit, and an improvement so great as to make it difficult of identification; but which improvement is immediately lost upon recurring to the ordinary mode of cultivation, and can not be maintained by graft or cion of the so improved variety. Now, the past summer has been one peculiarly adapted in my latitude to the growth of the vine, and the full developement of its fruit. The month of July had five days in succession of lower temperature than my record shows for the last fourteen years. The mean temperature of this month having been 76° or 6 degrees lower than its average mean for the last six years. During all this month the prevailing breeze was from the north coming over Lake Michigan, and the atmosphere during the whole summer was unusually dry, clear, and pleasant; the mean temperature for the month of August did not materially differ from the average for the past six years, while the average mean for the month of September was two degrees lower than that of former years, and on the 8th of October we had a frost which effectually killed all vine leaves. This unusual warm Summer for this latitude, hastened forward the ripen-

ing of all the different varieties of grapes, so that on the 6th day of September I was enabled to place before my family and friends, grapes of the Delaware fully ripened and matured. The Delaware opened its leaves on the 9th day of May, thus from the time of its foliation to the time of its ripening on the 6th day of September, a period of 119 days had elapsed, nor has it with me for the past twelve years required a longer time than one hundred and forty days in which fully to ripen its fruit, while its average days of growth from foliation to ripening, exclusive of this year, have been 136 days. My meteorological tables as well as my observations of the times of leafing, coming into blossom, coloring, and ripening, of the different grapes grown by me are full and accurate; my location is on a warm sandy alluvial 22 miles south of Chicago where the winter extremes are so great that I deem protection during its season of hybernation important. Nor should this last labor alarm any one who meditates the planting of a vineyard, as in one day myself and man can cover one acre of vines. This article, already too long to interest you or your readers, I cannot dismiss without again alluding to the quality of the Delaware, no foreign grape compares with it in any quality except size, and this I do not consider essential, no native grape as yet known can dispute place with it. It is our hardiest grown grape, the Clinton alone excepted. From no one vine can more fruit be obtained when all its requirements are fully known and complied with. These you have so often and fully given to the public in your excellent journal, that I forbear mentioning them. Of the recent disputants for public favor I shall say but little; I hope the Iona and Adirondac will prove all that their friends claim for them, though fruiting them the past year, will not yet undertake to place them according to their merit. The Diana is second in my estimation to the Delaware, the Rebecca close by, and the Concord is a grape that I would not be without.

LIFE AND DEATH IN THE FRUIT ORCHARD AND FLOWER GARDEN.

BY W. A., POKEEPSIE, N. Y.

WINTER is the death of vegetable life. Spring is its resurrection. The whole land is now a vast cemetery, waiting the warm rain and the revolving season to bring bud and blossom again into being. What a beautiful process is it all! what countless agencies are now at work beneath the earth's surface, to accomplish these vast results! The summer is past. Autumn has ceased to exist. Winter is spread now like a pall over the land. What a retrospect of loveliness and beauty the season of fruit and flowers offer! What splendid results are seen in the full graneries and abundant harvests of our land.

Run the eye back through the season of flowers, and see the rich verdure which carpeted the earth and bloomed in luxuriant foliage on the trees. How changed now the scene. The earth cold, and its surface dreary and forbidding. Trees with their leafless branches, now lean in dreary loneliness against the sky, adding gloom rather than beauty to the landscape. Then the rose, and the lily, and honeysuckle, and countless other flowers, perfumed the atmosphere and decked the garden with their beauty. Where are now all these exquisite objects of loveliness, with their fascinations for the eye and the senses? They are dead to the sight, but with the return of spring, they will live again.

What once so deliciously gratified the tastes in dainty fruits, during summer and autumn, have all disappeared. Where the luscious strawberry, the delicate peach, the rich cherry, the melting pear, the grape clusters, with their delicious flavors and savory juices, so coveted by fruit amateurs? All have gone out of sight. None are to be found on bush, or shrub, or vine, or tree! They are apparently all dead. Will they live again? As certain as there is truth in God's word. Seed-time and harvest are both promised. They will never fail. Those of us who survive the winter, will see the

spring flowers. Those who are alive will behold every kind of delicious summer fruit again. This is the great decree of the Infinite mind. It will never cease to be verified.

Already there are symptoms of the stupendous vegetable resurrection, which precedes spring, and anticipates summer. The great process is in progress in the bosom of the earth, and already buds begin to smell. The early crocus, and jonquil, and lilly, and tulip are eager to pierce the soil with their spikes and show their blossoms. They will hardly wait the passing away of the snow-pall or the cold of winter. Buds are formed and preparing for an early spring start. Beautiful provision is made to protect these precious fruits and flowers from destruction. See that tiny bud folded in a strong case of tough covering, which the frost cannot penetrate, but which the warmth of spring readily opens! In that is the principle of vegetable life, and while it is nourished by the juices of shrub or tree, its warm envelope shields it from the cold, and keeps it ready to spring into existence. Thus, while vegetation sleeps, its germs are vitalizing.

Decay is thus seen following fruit-life and flower maturity. Succeeding this is the repose nature needs, and then comes her recuperative powers and processes. Beneath the earth's surface they also are at work in myriads of roots and countless seeds and germs of vegetation. What a laboratory! How wonderful and varied the chemical combinations of soil to produce fruit, flower and vegetable life. How strangely mysterious the process by which the lilly is made to yield fragrance, the rose painted, and the peach and strawberry to give their matchless beauty and flavor! What endless form to buds, color to flowers, and taste to fruit pervades even one acre of garden soil. How faultless the tints, and fragrance, and color embodied in an exten-

sive estate, even in some horticultural grounds. The stars are infinite in number as the sands on the sea shore. Even more countless are the buds and flowers now preparing to be restored into life, with the warmth of spring.

Happy is the floral retrospect of summer's foliage and autumnal fruits and flowers. Even more delight is perspectively shadowed in looking to the opening season of a reviving floral world! How the true lover of nature yearns for the opening of spring, the song of birds, and

the first flowers and fragrance! How delicious the early frog-peep. How welcome the crocus, or snow-drop, or violet. How refreshing the pure breath of spring, and how eager is greeted the first warm shower which starts into life a mass of sweet buds and fragrant blossoms! Who has more exquisite or simple pleasures than the resident of the beautiful country. Who has cause for higher gratitude to God than he who dwells around blossoms and fruits and fragrant flowers.

NATIVE GRAPES.

SALEM, MASS., January 27, 1865.

MESSRS. GEO. E. & F. W. WOODWARD:—I read the article on Roger's Hybrids in your *HORTICULTURIST* to which I am a subscriber. Mr. Fuller evidently knows but little about them, or has seen wrong or very poor specimens. No. 3, though very early and fine here, is not considered equal to No. 15, which as grown here last and previous seasons was pronounced superior to every other sort grown in equally favorable circumstances. No. 4 is also thought fine and is very large and showy, but the 15 was exhibited at some of the County Exhibitions about here last year, and was given the highest premium for an out-door grape, where the much-praised Adirondac and Delaware were on exhibition. At another place, (Amesbury,) it was exhibited where the Adirondac was also present, and the No. 15 was called much the highest flavored grape, as you will notice by the enclosed analysis which I send you. It must be from the amount of sugar and acid it contains in comparison with Adirondac, which was grown much farther south, and ought to be richer in sugar. Mr. Bailey in his circular must be mistaken in his estimation of it,

MARCH, 1865.

when he pronounces it a good wine-grape, and superior to any Hybrid &c. You will notice that it has far too little acid for a wine-grape, and not enough sugar.

Yours truly,

EDWARD S. ROGERS.

P. S.—You will notice that the Delaware stands a little the highest, Nos. 15 and 4, next; but one of the specimens of Delaware analyzed, grew at Norwich, and the others were the best and sweetest that I tasted among many vines that ripened fruit in this place last season, and were partly shriveled and dried on the vine. This may account for the difference between the amount of sugar found in the Delaware by Dr. Wetherill of the Agricultural Department, Washington, and published in their report 1862, page 510, where he calls it 13 per cent.

The above experiment can be relied on as correct, as several trials were made from the same grape, and Mr. Balch is considered as capable of doing anything of this kind, as any one in the State. He was a graduate of the Scientific School, Cambridge.

E. S. ROGERS.

NATIVE GRAPES, BY D. M. BALCH.

(From the proceedings of the Essex Institute, January 23, 1865.)

It has been proved from numberless trials and disappointments extending over a long course of years, that the wine grape of Europe (*Vitis vinifera*) cannot be cultivated in the States east of the Rocky Mountains, with success, except under glass, both fruit and wine in open air culture, being sooner or later destroyed by disease, even in latitudes where the fruit would otherwise be perfect.

This much to be regretted failure is due neither to the cold of winter not the heat and aridity of summer, but probably to the great and rapid fluctuations of temperature peculiar to these States; for on the Pacific coast where the climate is far more equable, most European grapes flourish luxuriantly, and the bearing vines of California now number millions.

Such being the case, we in the East must turn for our table fruit and wine to the various indigenous wild grapes, (*Vitis labrusca*, *astivalis*, &c.) healthy and hardy plants, which grow spontaneously, varying in kind with the climate, from Maine to Texas. The fruit of these wild vines is in most cases of the very worst quality, being acid, astringent and of a peculiar musky odour and taste, the so-called foxiness; but that horticultural skill and patience, by which have been elaborated from the common choke-pear all our well-known varieties, approaching perfection in quality and ripening throughout the entire year, is being applied to the wild grape, and the results of the few past years are astonishing. The goal of perfection in this case is still far distant, but we have many good and some excellent varieties; and the number of these is being yearly augmented, so that it is by no means improbable that many grapes, hitherto popular, will be gradually discarded as others of better quality or habit arise to fill their places: I refer to the Isabella, Catawba, Hartford, &c., in all of which there is large room for improvement.

To be of value as a table fruit or for wine, a grape must contain a sufficient quantity of free acid, and sugar enough to temper, modify or partially disguise this acid, so that the juice shall not be flat and insipid but vinous and sparkling. In the case of table grapes the minor considerations of size, beauty, flavour, thin skin, deficiency of central pulp, &c., are of great importance, but the first point to be ascertained in a wine grape is the quantity of free acid and saccharine matter it is likely to produce in favorable circumstances.

To ascertain which (if any) of the native grapes ordinarily ripening in this vicinity, was best adapted to wine-making, I have this autumn analyzed the fresh must of many varieties. I had also another object in view, viz.: to ascertain if the table adapted to Oechsles' must-scale, by Gall, from numerous analyses of European musts in 1851, '52 and '53, were applicable to the must of our native grapes.

The method of analysis in all cases was as follows: The grapes were gathered when perfectly dry, pressed, and the juice strained through linen. The specific gravity of this clear must was taken by weight in a bottle with perforated stopper; a portion of must was diluted with fifty times its bulk of water, and sugar contents ascertained by Fehling's method, ("annalen der Chemie," und Pharm. Bd. 72, S. 106;) this method is very accurate if carefully performed: finally the free acid in a weighed portion was neutralized by a solution of caustic soda of such strength that 1 c. c. equalled .00825 grm. of Tartaric acid ($C_4H_6O_6$). All the free acid in must is not Tartaric, but in calculating results we can consider it so with small inaccuracy. The percentage results obtained are as follows:

Variety.	Time of gath'g.	Sp. gr.	Sugar	Acid.
Rogers' No. 15,	Sept. 5,	—	9.20	—
" "	" 26,	1.0783	16.47	.66
" "	Oct. 5,	1.0839	*17.90	.70
Delaware,	" 5,	1.0896	19.70	.70
" "	" 5,	1.1021	20.63	.65
Hartford Prolific,	Sept. 26,	1.0721	15.01	.43
Concord,	" 26,	1.0615	11.83	.86
V. ironclad,	Oct. 5,	1.0714	14.00	.28

Variety.	Time of gath'g.	Sp. gr.	Sugar	Acid.
Allen's Hybrid, (wh.)	" 5,	1-0780	16-20	*59
Union Village,	" 5,	1-0556	10-00	1-21
Rogers' No. 4,	Sept. 26,	1-0749	15-46	*61
" "	Oct. 5,	1-0819	*17-30	*65
" No. 22,	Sept. 26,	1-0723	14-56	*76
" "	Oct. 5,	1-0796	*16-70	*59
Clinton,	Sept. 26,	1-0688	13-77	2-40
Alvey (or Hagar,)	" 21,	1-0640	10-37	2-60
" "	Oct. 5,	1-0734	*14-70	2-02
Franklin,	Sept. 5,	—	8-77	—
" "	" 21,	1-0610	11-20	2-16
Rogers' No. 3,	" 26,	1-0734	14-70	*66
" "	Oct. 5,	1-0749	*15-30	*47
" No. 19,	Sept. 26,	1-0680	13-65	*81
" " 1,	Oct. 5,	1-0665	12-60	*62
" " 9,	Sept. 21,	1-0680	13-41	*87
" " 9,	" 26,	1-0742	15-00	*57
" " 33,	" 26,	1-0572	11-70	1-01
" " 41,	" 26,	1-0749	15-63	*76
" " 30,	Oct. 5,	1-0630	*11-80	*84

The sugar per centage marked * in the table, were not obtained by analysis, but are Dr. Gall's for the corresponding densities.

From the analyses, native grapes would seem to be divided into three classes.

1st. Those in which the proportions of acid and sugar are well balanced, as Delaware, Rogers' 4 and 15, Allens' Hybrid, &c.; these grapes should yield good wine.

2d. Those in which the acid is deficient; for instance, Adirondac, Hartford, &c.

3d. Those in which the great excess of acid overpowers all else, and renders the fruit nearly uneatable, such as Clinton, Franklin, &c.

The analyses prove that Dr. Gall's table for Oechsles' must scale, can be safely used in finding the saccharine contents of native musts, the numbers obtained by analysis agreeing closely, in most instances with the tabular amounts for corresponding densities.

To produce a wine that shall keep, it is necessary that the must should contain at least 15 per cent. of sugar.

In Germany, the must of the best grapes (Reisling,) of the most favorable seasons, contains 24—28 per cent. of sugar, 65 per cent. of free acids; this yields the most excellent wine, and is regarded as the normal standard with which inferior musts are compared, and often made to resemble as far as possible by dilution and addition of sugar. This method of bettering the must of partially-ripen

ed grapes, by which in bad seasons (total failures excepted) a wine can be made equal to the product of favorable seasons, is due to Dr. Ludwig Gall, who has published a treatise on the subject; an abridged translation of which may be found in the Patent Office Report, Agriculture, 1860.

To be of value for the production of wine, available for vineyard culture, a vine should be hardy enough to endure severe winters with slight protection; healthy and vigorous, so as to be little subject to the attacks of mildew, for it is very well known that a vine which has lost most of its foliage from this or any other cause cannot ripen its fruit. Injury from frost is little to be feared if the fruit be well ripened before its advent; the clusters should hang on the vine as long as the weather permits, and the ripest (better if slightly shrivelled) removed in three or four successive gatherings; they should be picked on a dry day and all defective berries removed. Many things influence early ripening, among which are soil, position, culture, variety and age of vine and crop adapted to its strength. The flavor of wine depends on the ripeness of the grapes and the proper proportion of free acids; this flavor is not present in the must but is developed during fermentation and the after preservation of the wine.

It might appear that undue preference had been given in these analyses to the "Rogers' Hybrids"; this is simply owing to the fact that these grapes, arising from the union of the wild grape (*Vitis labrusca*) with the Black Hamburg, and retaining some features of both, are more largely planted in this vicinity than other varieties, and are consequently more plenty in their season.

It has been asserted that these grapes are not true hybrids, but only seedlings of the "Mammoth Globe," and contain no foreign blood whatever. Such a conclusion is diametrically opposed to the horticultural experience of a century. For it is a well known fact that out of a large number, say five hundred chance seedlings of any

fruit, but one or two at most will excel their parent; but these remarkable "seedlings," some forty in number, have not a bad grape among them, and are so far superior to the "Mammoth Globe" as to preclude all comparison. Their admixture of foreign blood is patent in the heavy clusters of fruit, so far pulpless as to yield 75-80 per cent. of juice, and the indigenous element recognizable in the health, hardness and habit of the vine.

The chief value of analyses of grape must, lies in their repetition and comparison. The product of various seasons, climates and soils, should be examined. If this is done, we shall soon arrive at the grapes suitable for wine in different latitudes, and no doubt other important results. Those parts of

the country lying on an Isotherm of 70°-72° for the growing months, June, July, August, and September, wherever the summer rains are not excessive, are best adapted to wine growing; for a mean temperature of at least 65° for the above months is required for the ripening of even the earliest and hardiest varieties of grapes. The average temperature of Salem and vicinity, as deduced from observations extending over 45 years, is about 66.5°, and several degrees above this can be gained in well cultivated and protected gardens.

The above analyses are imperfect, several prominent grapes having been omitted, but I hope to extend and improve the collection at some future time.

December, 1864.

CINCINNATI HORTICULTURAL SOCIETY.

HORTICULTURAL ROOMS, 54 W. 4TH. ST.,
Saturday, January 14, 1865.

Society met. In the absence of the President Mr. George Graham took the chair.

The President elect being absent, sent his inaugural address, which was read and ordered to be printed with the minutes of the Society.

Mr. Clough, from the Committee with reference to the State Agricultural College, gave an account of the late meeting of the Ohio State Board of Agriculture, and their action and discussion on this important subject. He said that the project of attaching a mere "Professorship of Agriculture" to an existing university seemed to be almost abandoned, as people discovered that the subject was too important to be thus subordinated to any other, whatever.

At Mr. Clough's request, the Committee with reference to the Agricultural College was given further time.

Mr. Thompson, from the Committee to prepare a rejoinder to Mr. Yeatman's communication on "Grape-Growing, in this vicinity," submitted their report. They find that, though many vineyards have not

been remunerative, yet this has been chiefly owing to a want of thorough cultivation. They also present some statements of crops for the past season, which place the subject in a totally different aspect from that given by Mr. Yeatman. After a slight amendment, the report was unanimously adopted, and ordered to be printed in the daily papers.

To the President of the Cincinnati Horticultural Society:

The undersigned, appointed a committee to prepare a reply to a communication of Mr. Thomas H. Yeatman, recently made to this Society, to the effect that grape-growing can no longer be profitably followed in this vicinity, beg leave to report.

Although Mr. Yeatman mentions the Catawba grape in his communication, he does not seem to discourage the culture of that grape alone; but his charge is the sweeping one that "grape-growing can not longer be profitably followed in this latitude."

Now, it is well known to our grape-growers that the Catawba is not the only variety of grape grown hereabouts; but that seve-

ral other well-known and well-tried varieties are in successful and profitable cultivation, both as a wine and table grape—among which are the Delaware, Norton's Virginia, Ives' Seedling, Concord, and others.

But, shall we give up the Catawba? Your committee says no! Try it a little longer. It *has* done well, and yielded large profits, and, in many vineyards, is still doing well.

We have not confined our inquiries to Hamilton County, but have extended them into Clermont and Brown Counties, as far up as Moscow and Higginsport, twenty-eight miles above Cincinnati, and we find on the slopes of the Ohio, above the Miami, the small German vineyardists who own and cultivate their vineyards, have been realizing fair crops every year except the last, and the past season many had half a crop. And from a careful examination of the vineyards of Hamilton County, taking the last ten years,—although some have been seasons of failure—the average yield has paid a fair interest on the investment when properly cultivated; and we have not found more than one grower of Catawba out of twenty who were willing to adopt the opinion of Mr. Yeatman.

It should be borne in mind that viticulture is yet in its infancy in this country, and that it is the opinion of some of our best cultivators that the rot will pass away with better culture. Even in the old vine growing countries of Europe the crops are not always sure. Their vines have seasons of mildew and rot; and a few years since their grape crops failed for a succession of seasons, from these causes; yet they had no thought, for this reason, of digging up their vineyards and "planting locusts."

Successful grape-growing requires good culture, and your committee are of the opinion that lack of good culture in this vicinity has been one of the causes of poor success.

It is well known that Mr. Yeatman's vineyard is one of the oldest in this country. It is planted on a steep side-hill; and the good soil has long since washed off. No

manure has been applied, and your committee are informed that for some years past it has not been cultivated, but very much neglected.

We beg leave to suggest to Mr. Yeatman the treatment that was recommended many years ago for the barren fig-tree of Scripture—"dig about it and dung it," and he will get better crops.

But, as we have already said, there are other varieties of grapes being successfully grown in this vicinity, which Mr. Y. seems to be ignorant of, and we have extended our researches to some of those vineyards, and give the results as follows:

Ives' Seedling is a grape of much promise; not addicted to mildew or rot. Colonel Warring, of Indian Hill, in this county, has a small vineyard, only two acres in bearing, which made the past season 650 gallons of wine. The season previous, only one acre being in bearing, yielded 500 gallons. The Colonel makes his account for the past season's business stand as follows:

650 gallons Wine, sold at \$4 10....	\$2,665
Sale of Cuttings.....	1,500
	<hr/>
	\$4,165

Deduct cost of taking care of Vineyard.....	100
	<hr/>

Leaving the net product of vineyard. \$4,065 or over \$2,000 per acre.

Norton's Virginia is another promising grape, that is being considerably grown hereabouts.

The Messrs. Bogen have given us their figures for the product of this grape, as follows:

1863, from 1½ acres—first year in bearing—they made 500 gallons, sold at \$3.....	\$1,500
Sale of Cuttings.....	400
Sale of Roots from layers.....	800
	<hr/>
	\$2,700

Deduct for cost of culture.....	100
	<hr/>

Leaves net.....	\$2,600
or \$1,733 per acre.	

1864—Yield of same and cuttings for
 same \$2,300
 or about \$1,500 per acre.

Delaware is another grape of very great promise and profit, now being extensively grown throughout the country. The Messrs. Bogen from one-third of an acre—first bearing year—give us the following figures for the past season:

87 gallons of Wine sold at \$6 per	
gallon	\$522
Sold Cuttings	450
Sold Roots from layers	\$2,050
	<u>\$3,022</u>
Deduct cost of culture	22
	<u>\$3,000</u>

or \$9,000 per acre.

Mr. J. E. Mottier gives us as the result of his Delaware Vineyard for the past two years, as follows:

1863—From one and a half acres:	
165 gallons of wine made and sold at	
\$5 per gallon	\$825
Sale of Cuttings	\$1,630
	<u>\$2,455</u>
Deduct expenses	200
	<u>\$2,255</u>
Leaving net	\$2,225

or \$1,504 per acre.

1864—From the same vineyard, made:	
200 gallons of Wine, at \$6 per gall.	\$1,200
Sold Roots from layers	1,835
Sales of Cuttings, two years	<u>2,360</u>
	\$5,395
Deduct expenses	200
	<u>\$5,195</u>

or \$3,562 per acre.

Mr. Mottier says he might have obtained a larger yield of Wine, but his vineyard being young, he would not allow it to overbear.

Your committee, therefore, take pleasure in submitting the foregoing facts in refutation, in part, of the loose and reckless statements of Mr. Yeatman, and take this method of entering their protest against the same.

E. A. THOMPSON.

JOHN E. MOTTIER.

Mr. Klippart presented some volumes of the last "State Agricultural Report" to the Society. On motion, the thanks of the Society were tendered to Mr. K. for the same. Society then adjourned.

GEORGE GRAHAM, Vice-President.

R. H. WARDER, Secretary.

RECOLLECTIONS AND NOTES ON FRUIT CULTURE IN THE WESTERN STATES.

BY FRANK R.

Looking back twenty or more years on the condition and progress of fruit culture in the Western States, there is much to encourage and stimulate to increased and progressive action—much to feel grateful for toward those termed enthusiastic in fruit matters, and some little to induce caution and careful thought, combined with experimental practical knowledge in its continued pursuit.

Twenty or more years since, the names of men whose enthusiastic love of the sub-

ject led to the introduction and trial, and gratuitous distribution of choice fruits, were but few, and they widely spread over the whole Western States. Then there were no railroads, and even the dirt-roads for teams were almost impassable during the season for transporting trees and plants. Then there was, comparatively speaking, no market for the sale of fruits, and a few extra baskets, during the seasons of perishable fruits, as cherries, strawberries, peaches, etc., would glut the market, and

the owner would be glad to have people take as a gift that which should have brought him money. It is since the introduction and construction of railroads that now cross and recross these States, that fruit-growing has become a matter of thought or practice beyond the supplying of one's family.

True, occasional orchards were then found from which the owner looked forward to receive income from the sale of its fruits, and near the principal cities some attention was given to growing strawberries, etc., for marketing; but as a rule the apple orchard was designed for the use only of the owner, while a cherry tree or two, one or two wild pears, some seedling peaches, and a few currants, comprised the usual supply of fruits around and on most homesteads. Now, we can hardly ride five miles in any direction throughout the West without seeing large orchards of apples evidently designed as a resource toward the support of the owner; and wherever the peach succeeds, orchards comprising trees by the thousand are found, and pears on the quince roots, cherries on mazzard and mahaleb roots, are abundant in nearly every garden or yard, no matter how small. No longer does the resident of the West seek his strawberries, raspberries, etc., in the fields, but a portion of ground is set apart to their culture, and when not near enough to a paying market, the surplus is canned. In earlier days, after a certain time of year, dried apple sauce or apple butter was the only thing in fruit form found on the table, whether rich or poor; but now, since the advent of canning, fruits of all kinds are found on the tables of all from one year's end to the other, in season and out of season.

To this change we are indebted partially to the general diffusion of knowledge, partially to the cupidity of man in seizing hold of that business which promises profitable money returns, but more to the continued and unwearied labors of enthusiastic fruit-men.

Had it not been for the love of fruit-culture and its practice in the hands of enthu-

siasts, together with the Americanism of telling all they knew without compensation, we should have still been growing and eating the old Cat-head, Norfolk Beaupin, Milam, or other third-rate apples;—we should yet have been contented with the old black and white heart cherry; with trees of Kentish for our pies: we should have continued to regard the planting of pears as one of the things to be done for the benefit of coming generations; and in so doing have confined ourselves to old Summer Bonchretien, Jargonelle and Pound. We should have gone on to grow seedling peaches, and continued to gather our strawberries and other small fruits in the fields. To enthusiasm in fruit-culture, in however few bodies it may have been, we are greatly indebted; and every enthusiast deserves a vote of thanks from the whole people. (Let us give him one.)

In the prosecution of fruit-culture at this time, and looking forward, there are many things that render careful consideration of the subject actually necessary to insure success. In earlier days, before the country was much cleared up, and when the humidity of the climate was greater than at present, there was little or no difficulty in growing both tree and fruit in perfection; but as the face of the country has been denuded of foliage, and the transportation of trees from the eastern states brought us all of their variety of insects, the grower of fruits must now seek such positions as from the surroundings offer the best success as regards climate, and in order to ensure success, give constant and unremitting attention and culture.

As we have remarked, thirty years or more ago it mattered little where the apple or peach orchard was planted, whether on hill or in valley, near large bodies of water or far from them. Successful results were the rule and not the exception. At this period the rule is reversed, and the planter of fruit-trees or vines needs to look about him carefully and make a judicious selection of his location if he expects to realize any profit from sales of fruit. Whatever may

be advised, and however good such advice relative to fruit-culture, so far as the wants of a homestead are embodied, it must be conceded that the fruit-growing station is a comparatively limited one, looking at it in a business view.

Thirty years ago the collection of varieties of apples, pears, etc., at the West, numbered only dozens; now every variety known is in culture, and many varieties of apples utterly unknown to Eastern fruit-growers. Progress has been rapid, and while the New England fruit-grower has planted his hundreds of apple-trees, the western orchardist has planted by the thousand. Knowledge of varieties has kept pace also with extent of cultivation, and as Ohio opened with the first State organization of a Pomological Society for correction of nomenclature and comparison of sorts, so each additional western State has taken up the ball and kept it rolling, until now Michigan, Indiana, Illinois, and Missouri each have State organizations, the members of which are devoted to the study and advancement of the knowledge of pomology.

Although the apple, from its comparative hardihood, freedom from blight, productiveness in almost any and every locality, and the advantage of its being kept for winter sales, has been the leading fruit grown, yet the south shores of Lake Erie, the eastern Shore of Lake Michigan, Southwestern Kentucky, Southern Illinois and Indiana, and numerous high hilly inland points, have their peach orchards, rivalling, if not surpassing those of New Jersey or Delaware. Without making as much show or noise about pear-growing as some points in the Eastern States, yet the West has already its dwarf pear-orchards, numbering from five hundred to as many thousands each, and one planter recently told the writer he had thirty acres entirely planted to dwarf pears, now out two years. In the culture of grapes, thirty years since, with the exception of the vineyards of Mottier, Buchanan, and Longworth's tenants, little was known in the western States, and little thought of beyond planting a vine or

two of Isabella, Clinton, or Catawba: the latter only in the southern portions of the States. Then the above-named grapes, with, perhaps, the Elsinboro, Lenoir, and Herbemont, were about all that was known, and the Isabella counted as good as could be desired. Now, the culture of the grape is with every land-holder to the amount of eight or ten vines, and from that upwards to the extensive vineyards of Cincinnati, the islands and south shore of Lake Erie, Southern Illinois, and Missouri—numbering probably in all over ten thousand acres, legitimately as vineyards; and the varieties that twenty years ago were most in favor are now entirely discarded. As before remarked, thirty years ago the Isabella was the maximum of out-door grapes. Now, who does not know of the delicacy and sprightly richness of Delaware, Allens Hybrid, etc., etc.; and who thinks of eating Isabella when these varieties can be obtained?

Thirty years ago, it was rare to find any variety of the cherry, except black or red Mazzards, and the old Kentish or Pie. Some few parties, it is true, had, as early as 1816, introduced and planted some of the old varieties, such as Black Heart, Yellow Spanish, etc., but the trees were not usually found around the homesteads of the people, except as above-named—viz., the Mazzards and Kentish. Now, not only is the cherry-tree found in large orchards, especially for market purposes, but there is hardly a house throughout the country that has not more or less of cherry-trees of the best varieties surrounding it. What a change, too, in varieties! Most of the sorts regarded as the best thirty years ago have been superseded, and the varieties originated by Professor J. P. Kirtland, of Cleveland, Ohio, have taken their place. The old Kentish, although often found, yet it is only about one in twenty to thirty as compared with Early Richmond, Louis Phillip, and Hortense. What I have written of the apple, peach, etc., may also be said of the smaller fruits, but as I fear I have already said more than will be agree-

able to any but an enthusiastic lover of the subject, I forbear.

At another time, if desired, I will point out some of the most desirable localities for fruit-growing at the West, and the varieties that promise the most money returns. As

I have already said, although fruit-growing is comparatively a pursuit in which every owner of land is engaged, there are really comparatively few localities where success from year to year may be regarded as the rule.

LETTERS TO JOHN.

BY UNCLE SILVINUS.

DEAR JOHN: NOW that you have really become settled and commenced the nursery business, I will endeavor to redeem my promise and occasionally give you such advice and direction as I think will be of benefit to you.

I hope my dear nephew that you will not think me impertinent if I should write very plain, and probably I may sometimes tell you things that you already know full well. But you should remember that your old uncle has been through the woods and knows that there is much underbrush that young men are very likely to pass by as to insignificant for them to notice. But as they grow older they learn that these small things are often very important in making up the whole, and are often the very foundation of success.

You say that your place is but little known and express a desire to have your post-office address at some large city instead of a small country village. I admit that it might be better for you at first if it were so, still as you are a young man and expect to make yourself known, and build a reputation by your own exertions, it will make but little difference in a few years whether you are located at New York or Dunkerhook, if you do your part well, good customers will find you; others you do not want. I know that there are some foolish people who think they must send to New York, whether it is for fine silks or Prairie chickens. I believe that I have told you the story of the nurseryman who sent an order to Mr. Cahoon, of Wisconsin, for his mammoth Rhubarb and had it sent to New York,

then shipped it back to the near neighbors of Mr. Cahoon charging one hundred per cent advance on cost; the customers being perfectly satisfied with the price because it came from New York. You will often meet just such people and you must please them if possible, especially when they are willing to pay for their ignorance.

Do not let it trouble you if your near neighbors do not patronize you or scarcely look into your nursery, for it is quite possible that you will supply them with many articles although they may not be aware of it. Besides it is not best to encourage a too intimate acquaintance with a large circle of friends that live near by, for when all your beautiful specimen trees and vines come into bearing, you will have a great many Pear friends, and Grape friends, and so on to the end. People do not expect their butcher to furnish them occasional fine cuts without pay, or their grocer to treat them to specimens of their best tea, coffee and sugar gratis, but they seem to forget what it is that constitutes the nurserymens stock in trade, and that the fruit they desire you to give, is of much more value to you as specimens of what your saleable trees and vines will produce, than are the finest in any fruiterers window to him as specimen of his merchandise.

It is certainly very pleasant to have friends, but there is such a thing as having too many especially when one has business which requires his personal supervision.

If customers are few at the beginning, do not let it discourage you but look to the future with a hopeful eye, avoid the fatal

mistake which many young nurserymen have made of propagating a large quantity of trees, which soon grow in a few years to be totally unfit for sale. Many do this for the purpose of making a good show in their nurseries, but a good show in the pocket is much better, besides it costs less than to keep a nursery clear of weeds, and it is not always an easy matter for a new beginner to sell all the trees and plants he can grow. But I shall write you more fully on this point when I give you directions as to what kinds of plants to grow and how to propagate them.

Be very careful, and watchful in all you do, so as to avoid mistakes, and above all things be honest and industrious. Customers will forgive mistakes but never dishonesty.

If you should accidentally propagate a plant and sell it under a wrong name and afterwards discover your error, do not wait until every customer has discovered it, but write or send a circular to each and tell them you have made a mistake and wish to rectify it by refunding the money paid or in any other way which will be satisfactory.

You may think this course would be very humiliating and perhaps disgrace you in the good opinion of these customers, but it is not necessarily so, for a majority would reason somewhat thus; this young man means to be honest and is brave enough to confess that he has made a mistake (as all do in every walk of life) and if a slight error costs him so dearly he will not be likely to make a great many and we will patronize him still. For we much prefer to trade with a man whose conscience is so sensitive that it feels the weight of one error, than with one who has become so hardened that he would not feel the guilt of a hundred.

You must plant specimens of all kinds of trees and plants that you intend to propagate, for it will save you much time, trouble and expense to have your grafts, buds, &c., near at hand when you wish to use them. Besides, it is much better, to propagate from bearing trees than from those in the nursery as errors will be much sooner detected. Should you have any fruit or flower, about

the variety of which you are not quite sure, send it with a piece of the stem and leaves to some one of our leading pomologists or florists or to the Editors of the *HORTICULTURIST* for instance, and they will be most happy to render you assistance, provided you remember three things: 1st That you are the party to be accommodated, consequently. 2d Pay the express charges through. 3d Write a short letter and write it plain, stating just what you want to know and no more, not forgetting to put in a stamp to prepay postage on reply whether you get one by mail or otherwise.

Now John, a hint or two about advertising as it is time your advertisements were out if you expect them to be of service for spring sales.

Always advertise in the papers that circulate among people that take an interest in horticulture, and as a matter of course, such people take horticultural journals.

Do not advertise most in the papers that charge the least, for publishers generally know what is worth per line, and I do not think they usually overcharge.

Be careful and not to *brag* in your advertisement; do not call all other nurserymen imitators of yourself, or claim to have the best stock in the country, when it is impossible for you to know this, without personally visiting every nursery, which would be perfectly impracticable. Neither offer a million of any particular plant when you have only ten thousand, as it is not essential that everybody should know how many you have; besides a million is a large number and even a quarter of that is still large and more than you will often find of any one kind of plant in any nursery.

All that is required is that you should supply your customers with good, well grown plants of the kinds they order, and your advertisements are to let them know that you are prepared to do this and do it well.

Yours sincerely

UNCLE SILVINUS.

Woodside, Feb. 1865.

MILDEW ON THE GRAPE-VINE, II.

BY HORTICOLA.

RESULTS.—INSTRUMENTS.

THE readers of the *HORTICULTURIST* will remember our article on grapevine mildew, furnished in the June number, 1864, of this Magazine. We gave in it a detailed description, based on a most interesting letter from Mr. L. A. Neubert, of Leipzig, of the application of flour of sulphur, and announced that another article was to follow, containing a description of the instruments. That announcement was stricken out by the then editor of the *HORTICULTURIST*. In order to be intelligible, we repeat here briefly the treatment of the vines.

I. Treatment of the vines *before* the leaves appear.

They must be thoroughly syringed, also walls, posts, trellises, etc., with the following mixture: Dissolve $8\frac{1}{2}$ ounces of common salt, and 4 ounces of saltpetre, in 36 ounces (1 quart and $\frac{1}{4}$ pint) of water, adding 10 drops of *Oleum Anthos* (essence of rosemary), and 10 drops of *Oleum Lavedulæ* (essence of Lavender), shaking the mixture thoroughly before using it. Add one part of it to 100-120 parts of water.

II. Treatment of the vines *when they are in leaf*.

Sprinkle them thoroughly with flour of sulphur.

1. As soon as the leaves appear. This first sulphuration is the most important of all. Mr. Neubert says in a letter to us, received in October last, that it has more effect than all the others combined.

2. As soon as they are in blossom.

3. As soon as the berries are of the size of peas.

4. As soon as they commence coloring.

We succeeded with the utmost difficulty to construct a bellows similar to that described in Dubrueil's writings. It is, however, a very clumsy, imperfect affair; yet it did the work well enough. We premise that a great many of the foreign kinds we are cultivating were, in the fall of 1863,

so much enfeebled by the effects of the mildew, that we considered their destruction during the following summer as inevitable and certain. We carried out Mr. Neubert's directions to the letter, applying an extra sulphuration occasionally to some plants and even single leaves that needed it.

The results were astonishing in the highest degree. *There was not a trace of mildew to be found on any of my vines during the last summer and fall, except on a Riessling and on some canes of my Delawares, about which I shall speak presently. My foreign kinds not only recovered, but made canes from 25 to 40 feet long, and as thick as my thumb.*

The Riessling, mentioned in the above, had been overlooked; and when my attention once was attracted to it by the sickly appearance of the plant, we did not think it could live. While the other vines had made canes from 8 to 10 feet long, the shoots of the Riessling were not more than as many inches long; the leaves, of the size of a cent, were white with mildew. We immediately dusted it with sulphur. Instead of dying, it made a new shoot which was 19 feet long when we laid it down in November last.

The Delawares had been sprinkled but slightly. The ends of their canes were tied *horizontally*, seven feet above the ground, to a cord stretched between the posts, and had not been sprinkled at all. *The vines below, although but slightly sprinkled, did not show any mildew; the ends of the canes tied horizontally mildewed very badly, so that the leaves dropped prematurely.*

The Riessling, as well as the Delawares, show conclusively the value of systematic sulphuration. We are confident that we shall be able to eradicate the mildew this season entirely. We risk nothing in asserting that we shall have an abundant crop of grapes from our foreign kinds, which would be dead by this time without sulphuration.

The readers of the HORTICULTURIST, we trust, know that we are never ashamed to appear as learners before the public, and that we always state frankly the whole truth. There are, however, a number of competent witnesses, of whom we may be permitted to mention two. The one is Peter B. Mead, Consulting Horticulturist, and late editor of the HORTICULTURIST. He watched the progress of our operations with intense interest, visiting our collection of vines a number of times during the past summer. He once said: "Even if you did not wish to refer to me as a witness, I should consider it a sacred duty to make the results of your operations known. They surpass all my expectations, for I did not believe I should ever see vines in so beautiful a condition as yours are." The other is C. P. Schmidt, of Palisades, New York. We invited him to examine our vines; he came, after a conversation with Mr. Mead, in which Mr. Mead expressed himself as he had done towards us personally. He told us his expectations had been very high, but they were very much surpassed by what he saw. Mr. Schmidt is a gentleman of large experience in the culture of the vine.

The effect of sulphur on *thrips* is also very remarkable. We called Mr. Mead's attention to the fact that we had scarcely any thrips on our vines. This took place towards the end of July. The vines remained free from thrips; they yielded to the power of the sulphur.

The *instruments* are very simple and convenient. Before *de la Vergne's* bellows was invented, that with a box attached to it and with a straight tube was used. It is the same that most nurserymen use for fumigation, for which it is very convenient. But for sulphuration, it is now entirely superseded by *de la Vergne's* bellows. The sulphur contained in the first is so distant from the hands which hold the instrument that, by the long lever, its weight is very much increased. Its use is very fatiguing. In the second place, the tube is *straight*; therefore it is difficult to reach the

underside of the leaves. Dubreuil has already shown these imperfections. Besides, it is not very cheap. Last spring we saw one in John Street, for which \$3 50 were asked.

De la Vergne's bellows has no valve, and a curved tube which is closed by a piece of fine wire-cloth, which divides the sulphur so finely that it is thrown on the vines in the form of dust. The sulphur, being put in the bellows itself, does not fatigue the hands, and the curved tube enables the operator to reach the underside of the leaves as easily as any other part of the vine. It is the instrument which is now exclusively used in France; it is the instrument to which Mr. Neubert owed his success, and which wrought such a change on our own vines. As it is without any machinery whatever, even without a valve, the air passing in and out of the tube, it cannot get out of repair. It does the work so rapidly that we sulphurate about 500 vines thoroughly in three quarters of an hour. It requires but very little sulphur, but 15 lbs. having been applied to 5,000 vines during the past summer.

Another instrument is the so-called *grape-vine torch*. It consists of a cone made of common tin (sheet-iron coated with tin), the bottom (the base,) of which is closed with that same material perforated with numerous holes, large enough to put a piece of woollen yarn through each of them, leaving enough space for the sulphur to fall through when shaken. The woollen yarn spreads the sulphur very finely and evenly over the vines, but the *underside* of the leaves cannot be dashed with it. Dubreuil observes that the torch works well enough *when the leaves are perfectly dry*; when the yarn becomes moist, it does not work at all. He discarded, therefore, the yarn altogether, substituting for it very small holes, in which improved form the torch may be well adapted to dust the *upper side* of the leaves and single bunches. We have three forms of the torch in our possession, and must corroborate Dubreuil's experience.

Last summer we received from France a

bag with a tube to carry a supply of sulphur along. The bellows is very easily filled from it, as the tube of the bag fits in the hole of the bellows to receive the sulphur.

Our bellows being not only very clumsy, but also imperfect in several respects, we were induced, especially by Mr. Peter B. Mead, to import a dozen bellows from France. In the meantime, the number of gentlemen desirous of obtaining the bellows increased rapidly, so that we regretted not to have ordered six dozen. We learned, also, that the same instrument is extensively used in Europe to dust *hop vines* with sulphur; for, several years ago a certain kind of mildew, destructive to *hops*, made its appearance on the Continent as well as in this country. A gentleman from New Jersey, who grows hops on a large scale, informed us of the fact, requesting us urgently to let him have one of the bellows as soon as they should arrive here. A friend of our's, a florist, used our own instrument during the winter to free his roses from mildew, with perfect success. A lady friend at English Neighborhood applied sulphur this summer to her gooseberry bushes, and succeeded in raising large quantities where before

a perfect berry had not been obtained. It is certain that the bellows will be in great demand when known.

At last they came to hand, but we were horror-struck when we ascertained from the original bills, that the cost of each instrument, which is but a trifle in France, amounts *here* to \$4 47. Had our paper currency the value of gold, it would be only a little more than two dollars; still there stands the sum of four dollars and forty-seven cents.

We were frightened by looking at it; and after repeated consultations with Mr. Mead, who had engaged one of the bellows, we concluded to have some manufactured here, to lower the price of all by equalizing it. We tried to avoid the Charybdis, but we were caught by the Scilla. It became soon apparent that to procure the necessary tools and instruments, an enormous outlay of money had to be made. Not anticipating this in the beginning, we had ordered some of them, which, when furnished, did not answer at all. So we were forced by circumstances unforeseen to proceed in our course until we accomplished what we had been compelled to undertake.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

WE call the attention of our readers to our advertising columns this month as an evidence of the energy and prosperity of the nursery, floral and seed trade, whatever our readers may require in any department of Horticultural pursuits, will be found advertised or can be procured on application to some of our numerous advertisers: this advertising list is worthy of attentive perusal, as it marks a progress, decided and important in pursuits that are fast ranking themselves among the leading ones in this country. Horticulture in all its varied branches,

practical and ornamental opens this new year of 1865 with an impetus hitherto unknown, and it advances with a firm and decisive step that surprises even its most earnest enthusiasts. An advertising list amounting to upwards of \$1,000 cash in a single month and a subscription list that has increased 118 per cent during the last six months is a degree of prosperity beyond our reckoning. It plainly tells us that the energy displayed in the employment of first class talent in the editorial department brings with it its own reward.

WOODWARD'S COUNTRY HOMES.—This book is now ready for delivery, carefully written, elegantly illustrated and handsomely printed on heavy calendered paper, 168 pages, 12mo., 122 engravings, price \$1 50 post paid to any address: the engravings are by E. C. Hussey Esqr. and the typography by Mr. S. Hallet, 74 Fulton Street. We are well pleased with the artistic and mechanical execution of the whole work, and recommend it to the attention of all who contemplate building or remodeling a Home in the Country.

BOOKS BY MAIL.—It may not be generally known by our readers, that books are now sent by mail to all parts of the country free of expense to the purchaser, that readers on the extreme frontier can get for the same price and in the same good order and condition, any book published, as if he had made a personal call on the publisher. We keep in this office a complete stock of all works relating to Agriculture, Horticulture, Architecture, Landscape Gardening, Rural Art &c., put them up in first class order and mail them free to any address on receipt of publishers prices., or we procure and mail in same manner any book on other subjects.

HARTFORD, Conn., Feb. 9, 1865.

MESSRS. WOODWARD:—Allow me to commend "Our Method," as developed by our mutual friend "Dash." ("—") My experience in grape growing for the past eighteen years, warrants me in endorsing his recommendations. So well does he point out an economical and satisfactory way of planting vineyards, that I offer, with much hesitancy, one single amendment to his method. He recommends the use of "the sub-soil plough in each furrow." Now, this may be the very "straw in the way," which would deter "the man of moderate means" from preparing his ground for a vineyard. Sub-soiling may be all well enough, in its way, but suppose we leave this out rather than run the risk of defeating our object; and, in its place, suggest the application of some additional power applied to the "ordinary two-horse plow,"

so as to give increased depth of tilth by the deepest possible surface plowing. Sub-soil plows are not yet sufficiently common; nor are they within the easy reach of all those farmers and horticulturists to whom "our method" is so ably suggested. If the soil be well and deeply plowed, and the vines properly planted, may not extra dressings of surface manure, at intervals, be well advised in place of sub-soil plowing?

I am suspicious, at times—perhaps too much so—about this sub-soil and trenching business. It smacks, somewhat, of dogmatism—somewhat of those "routine plans," of Mead, Grant & Co., which may often make the neophyte "discouraged before he begins."

And here, by the way, I am reminded of that excellent and *suggestive* letter from F. R. Elliott. May we not all "expect to see great changes in ideas respecting grape culture during the next ten years?" It appears to me that grape growing, vineyard fashion, must be simplified, in order to be popularized among the cultivators of the soil generally.

Respectfully yours, &c., D. S. D.

BALTIMORE, February 8th, 1865.

MESS. G. E. & F. W. WOODWARD.

Gents: Enclosed please find Subscription for HORTICULTURIST, "*Gardener's Monthly and Country Gentlemen for 1865.*"

I can put up with a plainer breakfast, and dispense with desserts for dinner, but cannot part with my old familiar friends after tea; so pile on the hickory, and bring in the apples and nuts and as the sparkling Catawba passes round, we will wish you all a happy and prosperous New Year.

GRAPE WRITERS TO THE FRONT.

LOUISVILLE, KY., Jan'y. 14th, 1865.

I must confess I am tired of the Grape War which has been carried on in your columns for some time. If I had the power I would send such writers to the front, and let General Grant teach them how to throw *grape* at the rebels.

Yours respectfully

R. E. THOMPSON.

At the Annual Meeting of the Vermont State Agricultural Society, the following officers were elected for 1865.

President, Hon. F. W. Colburn, Springfield.

Vice-Presidents, Hon. John Gregory, Northfield. Hon. Henry Keyes, Newbury.

Secretary, Henry Clark, Poultney.

Treasurer, J. W. Colburn, Springfield.

OFFICERS OF THE RUTLAND COUNTY VERMONT AGRICULTURAL SOCIETY.

President, Pitt W. Hyde, Hydeville.

Vice-Presidents, Linsey Rounds Jr., Clarendon. L. Howard Kellogg, Benson.

Secretary, Henry Clark, Poultney.

Treasurer, A. D. Smith, Danby.

Auditor, Henry F. Lathrop, Pitsford.

At the annual meeting of the Newburgh Bay Horticultural Society, held at Newburgh, on 7th February, 1865, the following officers were elected for the ensuing year:

William A. Woodward, of Vails Gate, *President*; Rev. John Forsythe, D. D., O. S. Hathaway, *Vice Presidents*; Wm. L. Findley, *Secretary*; Daniel Smith, *Treasurer*; Charles Downing, Henry W. Sargent, T. B. Shelton, Joseph Howland, Wm. C. Hasbrouck, C. M. Wolcott, *Directors*.

This Society is organized pursuant to the Act of the Legislature of the State of New York, passed April, 1855. During the past year it held two Fairs, one in June, the other in September, having distributed about \$500 in premiums with a cash surplus on hand of \$375.

The bellows described by HORTICOLA in his article on Mildew can be had of C. F. Erhard of Silverbrook nursery. See his advertisement.

It will be seen on reference to our advertising columns, that the Logan Nurseries, of Wm. Bright, near Philadelphia, are offered for sale. The reputation of these grounds for unusual care and neatness in their keeping, and for finely grown specimen evergreens, will make them attractive to a purchaser.

ST. CATHARINES, C. W. *Feb'y* 10, 1865.
MESSRS. WOODWARD, Horticulturist office.

Gentlemen: I enclose to you the sum of two dollars for 1865. Do you know whether mushrooms can be grown for market profitably? At what prices do they sell in your city market?

Yours truly,

D. W. BEADLE.

We give you below the practical business-like reply of Mr. Josiah Carpenter.

NEW YORK, *Feb'y* 16, 1865.

GEO. E. & F. W. WOODWARD.

Gentlemen: Your inquiry is received. I give you all the information in my possession. At present they are very scarce, the autumn supply which was preserved having been exhausted. Propagation in this country does not seem to be encouraged. I believe that the most are raised in Massachusetts.

They can be raised in rich soil in a dark cellar, which can be done with very little expense at a remunerative profit, of course you understand how they are raised in France.

The demand for them here is constantly increasing with our population, all the first class Hotels and Saloons use them. The price last Fall when very plenty was from 25 to 50 cents per quart. Now they would bring an advance upon those prices.

Respectfully

JOSIAH CARPENTER.

BOOKS, &c. RECEIVED.

THE SELF-TEACHING system of Babbittian Penmanship, which we commended last month, is now published at \$1 50 by Babbitt & Wilt, 37 Park Row, N. Y.

REID'S NURSERIES: Catalogue for 1865 and 1866, of fruit and ornamental trees, flowering shrubs, &c., cultivated, and for sale by David D. Buchanan, successor to the late Wm. Reid, Elizabeth, N. J.

CATALOGUE of Reading Nursery: J. N. Manning, Proprietor, Reading, Mass.

CATALOGUE of J. M. Jordan's Nursery, on Grand Avenue, St. Louis, Mo.

CATALOGUE of exclusively hardy plants and nursery stock for sale at the Nursery of Eugene A. Baumann, Landscape Gardener, practical Gardener and Nurseryman, Morrisania, New York; after 15th April, Rahway, New Jersey.

DESCRIPTIVE CATALOGUE, No. 2: Kitchen Garden Seeds, &c., for sale by Alfred Bridgeman, importer and dealer in Vegetable, Grass, Herb and Flower Seeds, 876 Broadway, N. Y.

BRIDGEMAN'S Priced Catalogue of flower seeds for 1865, is now in press.

DREER'S, Garden Calendar for 1865, designed to furnish brief directions for the cultivation and management of the esculent, flower and fruit garden. Seed warehouse 714 Chestnut street, Philadelphia, Henry A. Dreer.

THIRD ANNUAL REPORT of the State Board of Agriculture of the State of Michigan, for the year 1864.

MONTHLY REPORT of the Agricultural Department for January, 1865.

THE Journal of the New York State Agricultural Society, December, 1864.

ELLWANGER & BARRY'S descriptive catalogue, No. 1, of fruits.

ELLWANGER & BARRY'S descriptive catalogue, No. 2, of ornamental trees, shrubs, roses, flowering plants, &c.

DESCRIPTIVE CATALOGUE of fruits, ornamental trees and plants, and price list of Greenvale Nurseries, Oswego, New York. W. D. Strowger, general agent, Oswego, N. Y.

BEMENT'S RABBIT FANCIER, AND AMERICAN ROSE CULTURIST.—We have received

copies of these works from the press of Orange Judd, 41 Park row, N. Y., handsomely and attractively gotten up in paper covers, and mailed free to any address for thirty cents each.

LE VERGER, PUBLICATION PERIODIQUE D'ARBOREICULTURE ET DE POMOLOGIE: Monthly. Paris, per annum, twenty-five francs; a new publication, commencing with January. Each number will contain four colored plates, containing eight varieties of fruits; would cost in New York at present rates of exchange, about \$18 per annum.

TRANSACTIONS of the California State Agricultural Society for the year 1863.

TRANSACTIONS of the Massachusetts Horticultural Society for the year 1864, from Eben Wight, Corresponding Secretary; containing also the proceedings on the occasion of laying the corner stone of the new Hall of the Massachusetts Horticultural Society, and the address of C. M. Hovey, Esq., President of the Society.

CATALOGUE OF STRAWBERRY PLANTS grown and for sale by Edward J. Evans & Co. York, Pennsylvania, for Spring 1865.

DESCRIPTIVE CATALOGUE of fruit and ornamental trees, shrubs and plants cultivated and for sale by Hubbard & Davis at the Detroit nursery, Fort Street, Detroit, Mich.

B. K. BLISS, SPRINGFIELD, MASS., CATALOGUE AND AMATEURS GUIDE TO THE FLOWER AND KITCHEN GARDEN:—Containing very full and carefully arranged lists of all the old standard varieties of both flower and vegetable seeds; as well as the latest novelties, with explicit directions for culture, and numerous engravings. This catalogue is valuable alike to the amateur and professional grower. It should be preserved as a book of reference. Sent to regular customers free, to all others for twenty-five cents, post-paid.

THE HORTICULTURIST.

VOL. XX.....APRIL, 1865.....NO. CCXXVI.

THE LAWN.

WHAT is a lawn? There is, as we apprehend, no subject connected with rural life, concerning which people have such different and opposite ideas as this. It is a term used by every one, from the possessor of a suburban house with its quarter or half acre of ground, up to the proprietor of a large rural estate. Each one has his own distinct idea of what constitutes a lawn. Some will dignify the small grass plot in front of the dwelling house, used once a week for the family bleaching, as *the lawn*; others, perhaps, with an undue reverence for the word, think it can only apply to a very extensive portion of ground, and would be satisfied with nothing short of a park; and between these extremes the term is quite as frequently misapplied.

The question then arises, what is meant by *the lawn*? What is its nature, and what constitutes a lawn? We begin then, by a definition. If you consult your Webster, you will find that the term is applied to a certain part of the Episcopal Vestment, and by a figure of speech, in which a part is sometimes used to denote the whole, it is sometimes used to designate the Episcopal

office itself. It is very clear that this is not the meaning that applies to our term.

Then again, you will find "Lawn" defined as "An open space between woods; a space of ground covered with grass, generally in front of, or around a house or mansion."

"Betwixt these *Lawns*, or level downs, and flocks. Grazing the tender herbs, were interspersed."

This then is the general acceptance of the word, that is to say, that portion of the grounds immediately surrounding the mansion, is known as the Lawn.

This term as associated with the English School of Landscape Gardening, carries with it ideas significant of great beauty. In all fine English estates the Lawn is a feature in itself; at once the pride and beauty of the place, and as such, no expense or pains is spared in its construction and subsequent maintenance.

It is, in fact, hardly possible to overestimate the value of a well maintained Lawn to a fine place.

To enter into a full description of what constitutes a fine lawn in the English ac-

ception, would involve a treatise too extended for the present article. It would involve not only a discourse agricultural on the preparation of the ground, and laying the same down into grass, but we should have to make digression into the field of Landscape Gardening, Landscape Engineering, the science of arboriculture, of trees, shrubs and flowers; we should have to discourse to our readers on the art of composition, and refer him to the rules of art, as studied and expressed by the Landscape Artist. We should have to talk about road building and gravelled walks, and a good many other matters besides, not to mention all the smaller items of embellishments and works of art. All this would make a very interesting and instructive article; but our design when we set out did not embrace so large a scope. Should information be desired on these points we may return to the subject at some future time. Our present design is to treat only of the ground work, the green sward, and to give a few hints as to its construction and keeping. It is a subject which we are persuaded will interest many of our readers, for there is no question more frequently put to us than this one: "How shall I make a good lawn, and how shall I keep it looking well throughout the season?"

The subject is by no means so simple as the uninitiated imagine. To make a good lawn is not an easy matter. It involves time, expense, and labor, three very essential requisites to every good work.

The failures in this country are the general rule, the successful attempts are the exceptions. The failures may universally be attributed to ignorance of the conditions, or the neglect of their proper fulfillment.

If the difficulty be great in England, where the moist soil, the humid atmosphere, and clouded sky, are all in such contrast with our baked soil, protracted droughts, and brazen canopy, the difficulty here is ten-fold greater. That failure so often comes, and that success is so very exceptional, may then be readily understood. Hence it is, that the rules laid down by

the English authorities, although founded on thorough science, are in the main not to be relied upon for our climate. We must go beyond them, and with a knowledge of the causes which operate against us seek means to overcome the difficulty.

To such of our readers then who are seeking information on this subject, we would remind them that the work they have in contemplation, is one which is to last a life time, and as it is to be done but once, it is worthy of all the study, time, expense and labour they have to bestow.

One of the great mistakes made in the agricultural practice of this country is, the paying so much attention to the *Chemical* condition of the soil, and so little to the *Mechanical*. Agricultural books are ransacked to find out the best fertilizers, chemists are called upon for analysis, and piles of money are invested in heaps of every description of manure; but it happens rarely that we find due attention paid to the mechanical condition and proper manipulation of the soil. Here is the first blunder made in the construction of a lawn. We do not mean it to be inferred, that we hold that grass will grow into a handsome sod, and keep green on a poor soil; but we do mean to say most distinctly, that unless the soil is properly prepared, you cannot, with all the manure you can gather, make a lawn of high grade; you may make the grass grow rank and long, and cut abundant crops for hay, but you will never feast your eyes on a close, even, velvety and evergreen lawn.

To accomplish your object, you must begin by a most thorough breaking up of the soil,—plough—plough deeply, then put in your sub-soil plough, stir up the sub-soil thoroughly until you have a deep and loose foundation. If your dimensions are small, and it be possible, we would say, use the spade in place of the plough, trench, just as thoroughly as if you were making an asparagus bed for your kitchen garden. But as this practice would be thorough for a lawn of not over an acre in extent, it might be impracticable for grounds of greater extent, and we would therefore be content

with a thorough sub-soiling. Then gather up every stone, large and small, and bring the surface of the ground by repeated harrowing, and the use of the shovel to as uniform a grade as labor will accomplish.

The next thing to be considered is, that this soil which you have so treated, may not only be very poor, but filled with seeds of pestilent weeds, which have lain dormant in the soil; even the sub-soil which you have brought to the surface may contain a crop; now it will never do to seed your lawn with the soil in this condition. Then too you may choose to apply an amount of manure which you have on hand; this very manure may be filled with seeds which would stock your grounds afresh.

Here is an important problem to solve. How shall we clean this ground? How shall we fertilize without stocking the soil with weed seeds? Neglect this, and after you have made your lawn, you will have the satisfaction of seeing it look like your neighbors', that is to say, exhibiting here and there very interesting patches of dandelion, plantain, daisy, thistles, *et id omne genus* of pestilent weeds, that you may worry out your life in fruitless attempts to exterminate. Now we think all this may be obviated in the process of *mechanical preparation*, that is to say, the cleaning and the manuring process work together. And this result may be accomplished by the use of green manures, *i. e.* growing a crop on the ground to plough in as manure. Our own practice is one which has proved successful, and we will suggest it here for our readers' benefit. We commence ploughing and sub-soiling just so early in the Spring as the ground is sufficiently dried to leave the upturned soil friable and tractable; then after there is no more risk of frost, we harrow the ground, and sow over the same a very heavy seeding of buckwheat; this will start with the first warm suns, and with it will germinate all the foul seed on the surface of the ground; the buckwheat being of quick growth, soon covers the ground, and effectually strangles every presumptuous weed.

We watch our growing crop with lively interest, and when early in the Summer it comes into flower, presenting a pleasing though unusual sight at that season, we remorselessly, before the seed has commenced to form, put in the plough and lay low all this field of beauty.

We have now put into the soil the equivalent of many loads of manure; have not added a solitary foul seed to the soil; have smothered out an enormous crop which had started into life, and have saved time and labor in hauling manure to the ground; not to speak of the store of manure itself, which can go to the crop of corn or potatoes.

This process may again be gone through with, or the ground may lie in its present state for several weeks, when the final process of ploughing, harrowing, clearing of stones, rolling, and leveling for the grass crop is commenced; then, late in the summer, a little after the time of sowing buckwheat, the ground being ready, we sow our seed, not as farmers usually do with a crop to realize from the coming season, but we give all to the grass; yet as a protection to the grass, we sow a moderate seeding of buckwheat, which coming up ahead of the grass, shelters the young crop from the hot suns, and which, when full grown and before it has time to mature its seed, will be cut down by the first frost and laid over the young grass, forming an excellent top dressing, and at the same time a winter overcoat. We have heard it objected to buckwheat, that it sours the ground. This we believe to be a fallacy, akin to many other errors and superstitions popular in the rural community. If, however, you are impressed with the fallacy, you may readily obviate the difficulty, (and with very great advantage to your ground) by the addition of a light top dressing of shell lime and unleached wood ashes.

A word now as to the seeding of your lawn. With what grasses will you seed it? As to this point, authorities differ. Some prefer grass of one kind alone, while others are profuse in their varieties.

Loudon, eminent as authority on Land-

scape Gardening, albeit a little antiquated, recommends several kinds, viz: *Agróstis vulgaris* var. *tenuifolia*, *Festuca duriuscula*, *Festuca ovina*, *Cynosurus Cristatus*, *Poa pratensis*, *Avena flavescens*, and *Trifolium minus*. These seeds to be mixed in equal proportions and sown at the rate of from four to six bushels to the acre. Then again we have the authority of Lawson, as quoted by Charles McIntosh, in his beautiful "Book of the Garden," of whom he says "we have no higher authority," who recommends the following table:

"—Mr. Lawson's list of Lawn grasses, etc. —kinds and quantities of Grass seeds required for sowing an imperial acre, for fine Lawns and Bowling greens, &c., kept constantly under the scythe, sown without a crop of barley or other grain, a practice which should not be followed where fine Lawns are required.

	Light soil.	Med. soil.	Heavy soil.
<i>Avena flavescens</i> ,	1 lbs.	lbs.	lbs.
<i>Cynosurus Cristatus</i> ,	5 "	6 "	7 "
<i>Festuca duriuscula</i> ,	3 "	3 "	4 "
<i>F. tenuifolia</i> ,	2 "	2 "	1 "
<i>Lolium perenne tenue</i>	20 "	20 "	20 "
<i>Poa Sempervirens</i> ,	1½ "	1¾ "	2 "
<i>P. Nemoralis</i>	1½ "	1½ "	2 "
<i>P. Trivialis</i> ,	1½ "	1¾ "	2 "
<i>Trifolium repens</i> ,	7 "	7 "	7 "
<i>T. minus</i> ,	2 "	2 "	1 "
	44½	45¼	46

"In cases where primary expense is deemed secondary to ultimate effect, 2 lbs. of the evergreen-wood meadow grass (*Poa Nemoralis* var. *Sempervirens*,) may be added to the quantities given above; and where the ground is shaded by trees, both *Poa Nemoralis* and *Poa Nemoralis Sempervirens* should be substituted for equal quantities of the two *Festucas* (given above); such quantities being dependent on the extent and depth of the shade."

These are English authorities, and the formulas are intended for the English climate and soil,—whether they are equally applicable here admits of a question.—There might be difficulty too in procuring

the several varieties, and then too, some of them might be old and unreliable.

Our own judgment would be to use the two varieties known in this country as Red Top and Kentucky blue-grass, adding white clover, and a pound or so of the sweet scented vernal *anthoxanthem odoratum* for the sake of the bouquet when cut. If the space intended to be kept as lawn be small, we would even go so far as to say, use but one grass and let that be the blue grass. If the grounds are extensive and it be desirable to grow the remoter part to a hay crop, say the flanks of the Lawn, we would earnestly recommend a trial of the Rye grass, one of the most valued of the English hay grasses; but make sure and get the *perennial*, and not the annual variety.

The effect of this grass in the Landscape is very beautiful. No grain crop exceeds it in beauty of appearance; it waves with every breath of air that passes over, and at a little distance has the appearance of water ruffled by the wind. It may not prove lasting, but as it fails other grasses may be sown with a top dressing; one side or flank may be devoted to this grass, and the other to timothy, or a mixture of timothy with red top.

This then is simply the ground-work of the Lawn. If it be in contemplation to plant groups of trees and shrubs, the process need not interfere in any respect with the plan; such places as are intended for the groups may be left unseeded. We would recommend the marking out of these spots, and raising the grade of the same somewhat above that of the Lawn; and keeping them free of grass. The effect of this will be not only to add variety to the scene, but greatly to enhance and set off the beauty of the trees and shrubs. It will add to their apparent size while young, and to such as are grown as single specimens, will give a majesty far greater than if they started from the level of the grass. Another good reason for this practice may be added in the avoiding all the trouble of cutting the grass among these trees and shrubs when the Lawn is mowed, which cutting

would have to be done by hand, and with a sickle; such places being impracticable to the scythe. The keeping in condition of a Lawn so constructed, will depend upon the liberality of the proprietor. It should be kept close by frequent mowings, and this generally after a rain, or while the grass is wet.

One word we would add as to the edges of the grass which border on the road ways or walks: these instead of being cut sharp down to the level of the roads and walks as usually done, should all be neatly and uniformly sloped down to the road level;

this will obviate what otherwise presents a very unsightly contrast, causing the best planned roads and most graceful threads of walk to look like interruptions of the beautiful green.

We have now had our say as to the preparation and the essentials of a fine Lawn. We honestly think we have not overestimated the value of the same, and we leave the subject, submitting to the judgment of our readers whether a work so important, and intended to be so permanent, is not worthy of any care, labour, or expense, which will insure success.

THE IMPROVEMENT OF FLOWERS.—HYBRIDIZATION.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

THE great majority of plants have the power of self-reproduction. In other words, both the fertilizing and the recipient organs are perfect in them, and the ovaries of the flower are capable of being impregnated by the anthers of the same flower. In other cases, as for example, the familiar one of the squash, the male flower is distinct from the female, though both grow on one plant. Instances are comparatively rare where a plant bears flowers of one sex only, and requires the aid of pollen from another plant to render it fruitful.

Hermaphrodite flowers, then, are the rule; and such flowers fertilized with their own pollen, will go on indefinitely producing individuals like themselves, subject only to the modifications arising from culture, and to the accidental and usually temporary variations arising from "sports." But suppose the ovaries of a flower to be impregnated with the pollen of a flower of a different species, the result is a *hybrid*, partaking of the character of both parents; or, if the two flowers are merely two varieties of the same species, then the offspring resulting is called a *cross*. This process of intermixture is constantly going on in Nature. Insects and the wind are Nature's great hybridizers. The bees, especially, flying from flower to

flower, covered with the fertilizing dust, are the unconscious authors of more new varieties than all the florists and botanists, who, since art and science began, have experimented in this captivating field. It is a theory of some botanists, that the original number of species was very small, and that the vast multitude now existing, have resulted in the course of ages from natural hybridization. According to this belief, the process of intermixture is not only in perfect harmony with Nature, but forms an essential part of her economy.

With respect to hybrids, two great questions arise; though those who advocate the theory just alluded to, will scarcely be willing to admit that such questions exist: First, have hybrids the power of reproduction? Secondly, granting that they have such power, will the offspring of the hybrid resemble its parent?

Neither of these questions is capable of a categorical answer. Some hybrids will bear fertile seed, and others will not. The offspring of some precisely resemble the parent, while those of others return to the forms of the maternal or paternal grand-parent. Thus, a red and a yellow Indian corn may be intermarried, and the offspring will partake of the character of both; but of the

descendants of this offspring, some will be red and some yellow. On the other hand, impregnate *Magnolia conspicua*, with the pollen of *Magnolia purpurea*. The result is the beautiful *Magnolia soulangiana*, which is capable of being reproduced indefinitely from its own seed, its offspring rarely, if ever, reverting to the characteristics of the original species.

Barren hybrids are no doubt numerous, but fertile hybrids are perhaps equally so. Barrenness, where it occurs, may often be traced to the fact that the male and female organs of the hybrids do not come to their maturity at the same time. The anther or male organ sometimes matures first, and the pollen is formed and shed before the stigma or female organ of the flower is ready to receive it. Hence, these flowers, barren without external aid, may often be fertilized by the pollen of other flowers applied when the stigma is mature.

Another important inquiry presents itself in connection with the phenomena of hybridization. Within what degrees of affinity is the possibility of intermarriage limited? Clearly, the pollen of a lily will not impregnate a rose; but any species of rose may be impregnated by the pollen of any other species of rose. More than this, hybrids have been occasionally produced between individuals of different genera. Thus, there is a well attested instance of an offspring resulting from the impregnation of *Digitalis ambigua*, with the pollen of *Gloxinia speciosa*. Probably, in this case, the offspring was barren. But though hybrids may occasionally result from the intermarriage of allied genera, like *Digitalis* and *Gloxinia*, they can never result from that of genera between which there is no affinity.

In the hybridization of two distinct species, the influence of the male parent upon the female is sometimes very striking. We have repeatedly impregnated the flowers of *Delphinium elatum*, with the pollen of *Delphinium formosum*, which is itself probably, a hybrid of the fertile and permanent class. The offspring usually displayed the combined features of both parents; but, in

a few instances, the male impressed its characteristics with such distinctness and force as quite to obliterate those of the female, and the resulting seedlings were undistinguishable from *Delphinium formosum*.

The processes of hybridization are of the utmost value to the florist. Combined with those of culture and selection, briefly described by us in a former article, they give the highest floricultural results. No better illustration of these need be given than that afforded by the Rose. The most prized and brilliant classes of this regal flower, are wholly due to hybridization. The Hybrid Perpetuals, Hybrid Chinas, Bourbons and Noisettes, are all the offspring of the intermarriage of distinct species. An humbler instance occurs in the Pansy, of which the varied and rich coloring is produced by the hybridization of the wild European violet, *Viola tricolor*, with other wild species of the genus, and a long course of subsequent culture and selection, by which the small and ill-developed flowers have been brought up to their present form and size.

By hybridization we combine in one plant the desirable qualities of several. Thus, a plant is remarkable for the grace, vigor, or compactness of its habit of growth, while another plant of the same, or a kindred species, is remarkable for the brilliant coloring of its flowers. We impregnate the flowers of the former with the pollen of the latter, and if the operation is successful, we obtain a result in which the color of the one and the habit of the other are, to a greater or less degree, united. Again, a plant has hardiness, vigor, and beauty; but it blooms only once in the season. Another plant of a kindred species, though perhaps less hardy and robust, has the property of blooming at intervals throughout a great part of the year. Its pollen is used to impregnate the flowers of the former, and, from the resulting seed, a plant is obtained which combines the maternal hardiness and vigor, with the paternal properties of continued blooming. The Hybrid Perpetual Roses, already mentioned, are a case of this kind. In them, by repeated hybridization, the robustness of

the hardy June roses has been combined with the rich coloring and ever-blooming properties of the tender China varieties.

Now, for the benefit of the amateur, we propose to add a word as to the methods of hybridizing. They are extremely simple; indeed, in some cases, the florist merely places the two plants in juxtaposition, at a distance from other plants of the same species, and trusts to the bees to do his work for him. We believe that most of the hybrid roses have been produced by the simple process of shaking or rubbing the two flowers together. These modes, it is evident, are very uncertain; the chances are, that the flower will be impregnated with its own pollen, rather than with that of the flower placed in contact with it; and, hence, of a given number of seedlings resulting from such operations, the smaller part only will be hybrids. There are means, however, by which hybridization may be made almost certain. These are best illustrated by the case of such a flower as the Lily, where the reproductive organs are large and prominent. The pistil is conspicuous in the centre of the flower, and it is surrounded by six anthers, equally conspicuous. Soon after the flower opens, these anthers become covered with a fine brown dust; this is the pollen in a mature state; at the same time, the stigma or fleshy extremity of the pistil becomes moist. This is a sign that that organ also is mature. Now, if by design or accident, a few grains of the pollen are brought into contact with the moist surface of the stigma, they adhere and begin at once a species of downward growth. Each grain puts forth a minute tubular filament, which penetrates the pistil until it reaches the ovary, where, by its fertilizing power, it causes the development of a seed. This seed is capable of producing a plant; and if the fertilizing pollen came from the same flower which bore the seed, or from another flower of the same kind, then this plant, of course, will not be a hybrid; but, if the pollen came from a flower of a different species, then the plant produced will be a true hybrid. The object, then, is to prevent the flower from

being fertilized by its own pollen, and to ensure its being fertilized by the pollen of such other flower as may have been chosen by the operator.

We will suppose the Red Japan Lily to be selected as the seed-bearer, or maternal parent; the florist wishes to raise from it a plant which will produce flowers of a deeper and more lively color, and, to this end, he aims to fertilize it with the pollen of the Scarlet Martagon Lily. His Japan Lily is in a pot, in the green-house, where it can be more conveniently operated on than in the open air, and protected from wind or insects which might bring to it particles of pollen from other lilies. The moment its buds begin to open, and before its anthers have matured, he cuts them—the anthers—all off, so that it cannot be fertilized by its own pollen; then he watches its pistils, and when he sees a gummy moisture exuding from their extremities, he knows that they are ripe for impregnation, and touches them with the pollen of the Scarlet Martagon. Vital action takes place almost immediately. In time, the seed-pods swell, the seeds ripen, and when gathered and sown, produce the hybrid plants desired.

When this process is carried on in the open air, the chance of failure from accidental impregnation is of course much greater; yet when the precautions which will readily suggest themselves after a little experience are adopted, the prospect of success is good. The plant operated on should be grown at a distance from other plants of the same genus, or, where this is impossible, it may be protected by glass, gauze, or some other covering which does not exclude light. In flowers where the reproductive organs are small and numerous, the operation becomes much more difficult. The French, who have produced more hybrids than any other people, make use, in such cases, of a variety of tweezers and other implements for manipulating the flower. A camel's hair pencil is always convenient for applying the pollen, and a pair of small tweezers for removing the anthers. In the comparatively rare cases where the flower is of one sex only,

the process is greatly simplified, since self-impregnation is impossible, and there are no anthers to remove.

In conclusion, we commend such experi-

ments to all amateurs. If, on the one hand, they demand patience, they are, on the other, very likely to reward it with most pleasing and interesting results.

DOES FRUIT GROWING PAY?

BY THE AUTHOR OF "TEN ACRES ENOUGH."

It is the experience of all who happen to come prominently before the public in connection with Agriculture, Horticulture, or any kindred pursuit, to be subjected to an almost uninterrupted catechism as to how the earth is to be cultivated, what fruits to plant, where to locate, what capital to begin with, and whether the business of fruit growing will pay. As in the case of the steamboat captain, the railroad conductor, and the ticket agent, there is no end to the questions. The writers of books on these subjects, the unlucky correspondents of the newspaper who append their names to what they write, all know how constant is the stream of enquiry. The fact is evidence of a wide-spread desire to obtain information upon topics in which there are more thousands interested than the generality of readers have any idea, as well as of lack of knowledge among this extensive class. The object which the majority have in view, the burthen of every inquiry, is to ascertain whether horticulture will pay. Profit is here, as everywhere, the great touchstone. There are men who can comprehend nothing that does not smack of six per cent., and who incontinently drop whatever they may have in hand whenever it falls below that zero of their affection. If there be principal enough, six per cent. may be a living rate. But in horticulture we look for more, because we are in the habit of getting more.

The American touchstone is everywhere the same—Will it pay? As a general proposition, fruit growing may be ranked among the remunerative occupations, or so vast a capital in money, land, and labor, would never have been devoted to it. The prevalent desire to plant trees and produce fruit

finds its principal check in the doubt as to the profitableness of the occupation. Personal intercourse with multitudes of inquirers has developed this as a prominent impediment with many. Other horticulturists must have observed a similar tendency. One inquirer had set his mind on grape culture, but he knew nothing of the subject beyond what he had learned from watching the progress of a single vine in the small garden attached to his city residence. He was a thorough business man, expert at figures, and at financiering, and quite able to cipher out the problem that as from his city vine he had repeatedly sold six dollars worth of grapes in a season, so if he had room enough for a thousand, his income ought to be six thousand dollars.

He was too shrewd to believe so vast a profit possible from the small outlay necessary. In his rambles among fruit growers, seeking from a multitude of counsellors to obtain wisdom, he stumbled upon me. It was the very moderation of his views that made him incredulous of the profit he had figured up on paper. He had said to himself, that if the grape culture were even half so remunerative as this, there ought to be a vineyard on every farm in the country, and that every grape grower would become rich. He repeated the proposition to me. The corollary seemed inevitable from the premises; but we concluded that though great results were constantly realized from a single vine or two, such as he had ciphered out were probably impossible. His object was to get into the country, somewhere just outside of the city, and to do something with his mother earth, by which he could add a thousand dollars to his income. With

what he had already, that addition would make him snug.

I gave it as my opinion that the proposition was a very simple one; and taking him to a Hartford Prolific vine, four years old, told him it had last year produced forty pounds of grapes, which would have sold readily for \$5, and this without the vine being in very good condition. I assured him that if he could procure sufficient ground to contain a thousand of these vines, get them into bearing, and attend to them as assiduously as he then did to his counting-house, he would be sure of his additional thousand a year—he would be made up, even if each vine yielded only a fifth of that before us. We both concluded it was almost impossible to overstock the market. The fox grape, whose flavor would outrank even a lieutenant general, sells in every market with the greatest readiness. There is a single vine of this variety, near Philadelphia, which covers the tops of fourteen apple trees. No doubt the Indians who flourished there before the days of William Penn, have many times feasted on its clusters. No pruning knife has ever touched it, yet it produces 70 bushels of grapes yearly, which sell in the Philadelphia market for a dollar a bushel. During all this time the apple trees produce good crops of fruit.

Looking more carefully into this matter of the profit realized from all descriptions of fruit growing, and running over only two or three authorities on the subject, multitudes of instances are to be found where extraordinary gains are annually realized without apparent care or skill. Some years ago there was an orchard of 70 Mayduke cherry trees, a few miles below Philadelphia, the daily sales from which, during the season, amounted to \$80. I have this week seen an Amber cherry tree, growing in New Jersey, from which \$60 to \$80 worth is annually sold, and the owner declares that if all the fruit were gathered, and at the right time, the product would be \$100. From twenty apple trees of the Early Red-streak and the Early Queen varieties, growing near Philadelphia, 300 bushels of fruit

have been gathered, which sold for \$225. A single Washington plum tree, in a city garden, has been known to yield six bushels of fruit, worth \$10 per bushel. A vineyard some sixteen miles from Philadelphia, occupying $\frac{3}{4}$ of an acre, has produced \$300, when the grapes sold for only eight cents a pound, or at the rate of \$800 per acre. A single Catawba vine, in the same neighborhood, has produced ten bushels, worth \$40, at market prices. I have seen the Catawba clambering up the side of a barn in Delaware, and when only four years old, yielded hundreds of pounds of grapes.

The early settlers of this country, when writing home to their friends in England, speak in glowing language of the abundance of fine grapes which were everywhere to be found in the woods, proving the general adaptation of our soil and climate for the grape culture. Among those thus referred to is the Elsinburg, a native of New Jersey, and perhaps the only good original variety still cultivated, of the great profusion which appears to have been in existence at the first landing of the whites. Where have the others gone, or did the uneducated tastes of our progenitors so relish the rank muskiness of the Fox grape, as to pronounce it delicious?

No matter what fruit is examined, the same results are found to occur. A row of common gooseberries a hundred yards long, have realized over \$40. Two superior Apricot trees, have produced \$100 worth of fruit in a season. There are Onondaga pear trees in New Jersey gardens, which yield fruit enough, every season, to nett their owners \$30 per tree. I have seen a small plum orchard, in which the owner confines his poultry by a high latticed fence, which never fails to produce an abundant crop of perfect fruit.

These are mere isolated beginnings, such as every reader can call to mind as occurring somewhere around him. They are unmistakable evidences of the great profit to be realised by those who cultivate vines and fruit trees intelligently and carefully. But if a single plum tree produce \$30 annually

it will not invariably follow that 100 will produce \$3,000. Yet the plum culture, in the hands of some men, has been made a great business. I find it stated that one fruit grower near New York has sent 1,600 bushels of plums to that market in a season, with apricots, for which he received \$14 per bushel. This party has often declared that these plum trees, which stand about his buildings, and occupy but little room, produce him more profit than his farm of two hundred acres. Another grower has sold in New York, 400 bushels of Frost Gage plums in one season, for which he received \$1200. At the recent meeting of the Western New York Fruit Growers' Society, it was stated by Mr. Spencer, that he had seen a vineyard of $1\frac{3}{4}$ acres, which produced

ten tons of Isabella grapes. This ground would not grow wheat a foot high. Any one can tell how many times this crop, at a shilling a pound, would have paid for the ground at even \$200 per acre.

It is thus manifest that fruit growing, whether on a large or small scale, is far more profitable than any other branch of agriculture. Though a thousand trees may not average the yield of a single one, yet the product will be sufficient to satisfy a reasonable man. The point is—get the trees, or vines, or bushes. Buy only the best. It is the worst possible economy to purchase a poor variety, or a stunted specimen, because it costs a shilling or two less at the nursery.

THE HEMLOCK.—ITS BEAUTY AND ITS VALUE.

BY C. N. B.

THE Hemlock, as it is generally called, is the most beautiful tree of the Evergreen family. We consider it the handsomest of all evergreens. It is distinguished from all the pines by the softness and delicacy of its tufted foliage; from the spruce by its slender tapering branchlets, and the smallness of its limbs; and from the balsam-fir by its small terminal cones; by the irregularity of its branches, and the gracefulness of its whole appearance. The young trees, by their numerous irregular branches clothed with foliage of a delicate green, form a rich mass of verdure; and when, in the beginning of summer, each twig is terminated with a tuft of yellowish green, recent leaves, surmounting the darker green of the former year, the effect, as an object of beauty, is equalled by very few flowering shrubs, and far surpasses that produced by any other tree. It possesses a lightness and gracefulness—especially when the dark green mass is moved by the gentle breeze—that cannot fail to attract the attention of the most careless observer of the beautiful in nature; it is entirely free from that stiff-

ness, grenadier-like appearance which some other trees of the same family exhibit. It is a happy, joyous tree; like the polite and vivacious Frenchman, it continually bows and smiles, alike in sunshine or storm, winter or summer: in the morning it welcomes by its glad smiles and graceful motions the glorious orb of day, and as he sinks beneath the western horizon, it waves its tiny hands as if to bid it a kind adieu for the night. When set on a lawn, singly or in groups, it forms a dense mass and produces a deep shade; perhaps it is best when planted in this way. We know a place where stand four or five noble hemlocks, beneath whose shade crops out a somewhat grotesque ledge of rocks—and we must say, though the locality is far from good, that we never pass that spot without mingled feelings of love and admiration, and have often wished that we could live, die, and be buried there, that they might sing a requiem over the grave of an humble lover of nature's beauty.

While collectors are searching zealously the remotest parts of the earth, and send-

ing home the products of their labor—which often prove of little value—we strangely neglect to cultivate and prize the handsomest evergreen that can be found the world over, so far as our knowledge extends.

It is perfectly hardy, being found in every part of this State, and far in the most northern parts of Canada; it is found in almost every kind of soil. It rises in the forest to the height, often, of sixty or seventy feet, and even more. It is often found and flourishes in the ruins of rocks, on side-hills, exposed to the violent storms—in dark glens, as well as in better localities, where it grows to perfection. It will grow on dry or wet ground, though it does best where it is tolerably moist.

Mr. Emerson, in his report on the shrubs and trees of Massachusetts, says: "As it bears pruning almost to any degree without suffering injury; it is well suited to form screens for the protection of more tender trees and plants, and for concealing disagreeable objects. By being planted in double or triple rows, it may in a few years be made to assume the appearance of an impenetrable wall—really impenetrable to the wind and to domestic animals.

"A hedge of this kind, seven or eight feet high, on a bleak, barren plain, exposed to the northwest winds, gave Dr. Green, of Mansfield, a warm, sunny, sheltered spot for the cultivation of delicate annual plants. When I saw the annuals, (several of which were rare exotics,) were beautiful; the hemlock screen was much more so." After having cited the above it is useless for us to try to add anything in its favor

as a hedge plant. We have spoken of some of its advantages, and now perchance we hear some one say it is difficult to transplant, and that it grows slow, while young. The latter objection is real to some extent, it does not grow very fast—we mean small plants—for the first year or two; after that, if the land is good, it makes very good growth, though it grows, even when young, as well or better than many other things with which we take much pains, which are inferior to this. The former objection we shall answer by adding our own experience in transplanting the tree.

In 1856 we obtained a lot of small hemlock trees from one and a half to three feet in height, from a mucky swamp: we chose a moist day, in the latter part of May, and set them out as soon as possible; when taking them up, we were careful not to disturb the roots in the ball of earth. Four-fifths of them lived and did well. The next year we tried larger trees from a different soil, a loam somewhat gravelly, moved about seventy-five of sizes from six to nine feet in height, chose a stormy day; took them up with a ball of earth, as before, and set them out immediately. Every one lived and flourished finely. From experience we are satisfied that they are not difficult to make live, if properly treated. That it does not occupy the position among our ornamental trees that it ought to, we think all will allow. We hope some of the subscribers to the *HORTICULTURIST* will try the experiment of transplanting the hemlock—if experiment it can be called—and report.

Pokeepsie, 1864.

THE GARDEN.

BY T——, ELGIN, ILLINOIS.

WHAT words can waken more pleasurable recollections, or conjure brighter fancies? With what magic power they light up again the aurora of childhood; how they re-touch the fading memories of youth; what refresh-

ing cheer they bring to toiling manhood; what soothing pictures and needed pastime to age? The Garden—ever the recurring memento and bright ideal of the Eden-home—cherished aspiration of the race in the ages!

—hallowed also, as the chosen resort and repose of the Messiah; scene of his Passion; place of his Sepulchre; witness of his Resurrection. The All-Father gave it at the first. We lost it; we try to re-construct and re-produce it, for our Human Nature yearns towards the Fatherland.

So we take the offerings of nature and of art; we gather all beautiful things; we plant "every tree pleasant to the sight and good for food," and having given them due arrangement and tasteful display in a little plot of ground, we call the smiling assemblage—Our Garden. The elements of its composition are pleasing, *most* pleasing forms, colors, flavors, odors, sounds. These, used with skilful adaptation, constitute the embellishment of home, and ministers to its true enjoyment. Not the home of the wealthy only, but of the humblest cottager, as well. As it is the in-born desire of all, so it is within the reach of all—outside perhaps of the crowded city. A little thought, a little time, and less expense will bring many of its comforts and its pleasures to the humblest dwelling. Who of Adam's sons does not picture to himself and for himself that Eden home; who of Eve's daughters does not long for something of that lost Garden—its beautiful creations, delicious blooms, and refreshing fruits?

How much or how little of these may be requisite seems unimportant to inquire. The object sought is a pure and elevating pleasure. This will be secured to the lover of such pursuits in accordance to his taste, culture, and relative position. Hence the real enjoyments of the garden are much the same to rich and poor. On whatever scale we pursue the ornamental, and to whatever attainments we arrive, we are scarcely satisfied without progress. Something more is wanted, at least some change. There may be, it is true, a too lavish expenditure; like his of Jerusalem, our gratifications may end in satiety; an "Atticus" may lapse into garden-home monomania and become "too content and happy;" the lowly may become discouraged or disgusted with their "poor show;" but a tempered progress in

the right direction will ensure to all classes the healthful enjoyments of garden-culture and home adornment.

A quarter of a century ago, when I brought my little family here, I brought with them some of the materials for such decoration—something to make my rustic home put on a cheery aspect. It was a good investment, that little bill of fruit trees and evergreens, ornamental shrubs, and flowering herbaceous plants and bulbs. Long-tried and steadfast friends in all our fortunes, how have they cheered us and our children, and they bless us still. And their offspring, how have they been multiplied and distributed all through our town and the adjacent country round, so that wherever I go, I am greeted by my smiling pets and old familiars.

My two-acre garden-home is all my own creation, save one grand old oak and a group of venerable Hickories—graced with the vine and creepers of the crimson leaf.—"Long ago," the wild natives rested from the chase beneath these shades, and here indulged their rude pastimes. Near by—and within the memory of the "oldest inhabitant"—their canoes were on the river, and their wigwams on the shore. They have silently passed away. Their arrows no longer rebound from their shaggy trunks. They crack these nuts no more. The Blue Bird, Meadow Lark and Robin return, harbingers of spring; the Jay, the Yellow Hammer, the Red Head and other Peckers, love still to linger around these old trees; and when they put on their leafy garniture, the Whippoorwill and the morning Dove are heard, and the Oriole, Thrush, and all the Warblers "sing (and build) among the branches." Underneath, springing from the turfy mould, the Liver-Leaf and Twin-Leaf, the Dark Flower and tawney Fillium, the Moccasin Flower, Succor and Painted Cup make their annual visits; but these red children of the prairies come not again.

I love these old trees, and all the more for their once narrow escape from the woodman's axe. What madness to destroy at once the growth of centuries, and a life-long

joy! It was woman's plea that secured to me this great pleasure. Bless her tasteful appreciation and innate love of the beautiful. There stands the old Overcup, still erect, firm, massive, majestic, grand in repose, and strong in the tempest. But these towering Shell barks, how gracefully they bend and wave in the passing gale! And when the storm is over, how beautifully grouped beneath the over-arching rainbow, and how resplendent in the glow of the setting sun!

The years have come and gone. Building and culture, with annual contributions from Flora and Pomona have beautified and enriched my humble, but pleasant home.—Around me now, are the parks and domes and spires and other structures, the cumulatives of the incipient city. Below, on the banks of the river—their loved Waugousha—are yet to be seen the tumuli of another and wasted race; while above in the distance, rise the “gleaming marbles,” where rest our—already numerous—dear departed.

I have an out-look from my living-room windows, which is “a joy forever.” Immediately across the river,—itself an object of beauty always—is a gently sloping bluff, rising some hundred feet or more, then sweeping off in the dim prairie distance. Mid-way up this slope stand clustered or scattered some young Red-Oaks, which retain their leaves persistently through the winter. Their color is bright purplish brown. These trees are of an irregular pyramidal form. When snow lies on the ground they stand out in bold relief, their forms sharply

defined, and their colors contrasting finely with the light back ground. Just above, and partly environed by them is a tasteful cottage, with numerous evergreens. A little to the right and on the summit of the gentle acclivity, are grouped the rounded forms of our own Burr-Oaks, nude 'tis true in winter—yet finely penciled on the blue sky or warm amber glow of evening—but in summer, robed in richest green, charming the beholder in their beautiful repose, or upturning to the breeze a sheen of emerald and silver as no other trees ever did or can. Far beyond may be seen a cluster of Lombardy poplars, uplifting their oblong taper forms high above the horizon,—fitting and graceful land marks on the out-reaching prairie.

I have spoken of this out-look, partly because it presents several classes of trees of great beauty and of marked effect in the landscape, and partly because it suggests a useful and pleasing reflection. We embellish not for ourselves alone. From some standpoint these pleasure-giving objects will bless the view of others. Who is not happier for these art-creations, these arborescent forms, the laughing foliage, bloom and fruitage, which decorate some one's pleasure-grounds and dwelling? Spare then the trees, ye who have them, and plant ye who have them not. Let us make the beautiful in grounds a special study, and leisurely endeavor. So shall contemporaries admire—perhaps emulate—artistic culture, and posterity rejoice in these provident and beneficent labors.

AN ESSAY ON THE PREPARATION OF SOIL, AND PROPAGATING AND PLANTING OF GRAPE VINES,

READ before “The Missouri State Horticultural Society,” at St. Louis, Mo., January 11th, 1865. By DR. H. SCHRODER, of Bloomington, Ill.

* * * * *

THE land for a new vineyard should, when possible, be plowed in the fall or if in the spring, just as soon as the ground is dry

enough. To do this rightly, take a strong plow and plow as deep as you possibly can—in the same furrow follow with a deep Tiller plow, putting it as deep as the horses can draw, turning the subsoil, or at least well pulverizing it, and so go over all the land. If you have time enough it will be better to let the land lie for a few days or

weeks before laying off your rows—eight feet apart is the preferred distance. To lay off your rows and have them straight, take poles eight or ten feet long, and put them at the end of the rows—on each pole put a handkerchief, cap, or a loyal and if possible, a radical newspaper—use the poles as a guide. Then with a good team, plow a furrow straight between the poles from one side of the Vineyard to the other,—changing your guide poles for each row. After making the first furrow across the field, returning make another furrow two (2) feet from the first—so go up and down each row with the plow until you have thrown out a ditch, say two feet wide, along where each row of vines are to be planted. Now take Patrick with the spade, and have him spade the ground you have so plowed, as deeply as he can. That is, have him spade the bottom of the furrow thoroughly. If you have rotten manure, ashes or compost, go along each row with your wagon or cart, and throw in two or four inches of the manure into each ditch, covering the bottom well with it. Now put your plow on again, and plow so that every ditch will be filled up and a ridge formed along each row. By this plowing and spading you loosen the soil two or three feet deep. This frequent plowing thoroughly pulverizes the soil, and leaves it in a fit condition to be penetrated by the tender rootlets of the young vines. It will be seen that in preparing the ground in this way you will have an open drain on either side of each row of vines. It would be better if all those side drains could empty into an open drain, of larger size, at the end or ends of these small ones. Now you are ready for planting.

If you have no faithful German, go to work yourself—with a common garden hoe, make a slanting, shallow hole into your ridge, where you wish to plant the first vine. Take your vine from its water bath, in a bucket, where it should be kept until the moment before planting, or from its grouted bed, spread out the roots and cover your vine. To every vine put down a small stake 3 or 4 feet long—to this your vine is

to be tied during its first year's growth—trim your vine so that you have but one eye above the ground. With your six or eight feet pole, measure off for your next vine and plant as before and so on until you get through your vineyard. If you have anything suitable, it would pay you to mulch your vine row. It will save you many a vine during the hot, dry days of our summers, and at the same time will enrich your ground.

You can now plow your ground between your rows, and between each row of vines plant two rows of strawberry plants—keep these plants in rows by frequently using the Cultivator between the grape rows and the strawberry plant. By this you keep your strawberries within bounds, and at the same time you keep the ground around your vines in good condition. Let no weeds grow in your vineyard—nor amongst your strawberry plants. By this plan of raising strawberries, last year, I sold over \$3,000 worth from four acres of my old vineyard. These plants will pay you for all the treatment of the land as well as for the vines. It is very essential to have good healthy vines for planting any vineyard. The most failures have been made in consequence of planting inferior plants. Many good varieties of grapes have been condemned and called “humbugs,” by reason of nothing but inferior “steam plants” having been planted. Many of these new kinds have been sold at enormous prices, and have given nothing but dissatisfaction to all buyers. I have had to pay dearly for my experience in this line.

Mr. President, my experience has taught me that the very best vines, in all cases, are those raised as layers. These layers must be grown from well ripened wood from bearing vines. The next best, I have found to be long cuttings, grown by proper treatment.

Vines from Layers.—These can be made by any thinking man, very readily, and one having a few good vines can soon have as many vines as he will want. If we want to see grape culture flourish we must teach

people how to get good vines, and how to get them *cheap*.

To make layers, prepare your ground so that it will be well pulverized around the vine you wish to lay down. Under the cane you wish to lay down, dig out a slight trench, with your hand bend down the lowest cane or branch, and pin it down to the bottom of the trench. Lay your vine in its whole length and there let it be until the eyes have made a growth of 5 or 6 inches, then fill up half your trench with good soil—in a week or so fill in the rest of the soil. When the young canes have made a growth of two or three feet pinch off the ends, in order to get riper and stronger wood, and plump eyes, and then leave them to take care of themselves until fall.—In the fall cut them loose from the mother vine, dig them up and cut them apart, so that you have a good cane from every shoot from the whole length of the cane you lay down.

Every such vine is worth a dozen of your steam made “single-eye” plants. If your cane is 7 feet long, you will have perhaps some twenty or thirty fine No. 1 layers from it. Some of my bearing vines have made me, in this way, over 100 extra good layers. You can imagine how many you can make from an acre of, say 1000 vines.

Last year I raised, on an average, 10,000 layers to the acre, and many a finger thick of bearing layers, and many made wood enough for over a gallon of wine to each vine, and enough to make fifty superior layers.

I cannot recommend you to follow this heavy layering from your bearing vines, year after year, for you assuredly weaken your vines by so doing. Be moderate in your layers, and you will be all right.

Plants from long Cuttings.—Cut your canes in the fall, with from two to five eyes or joints each, tie them in bundles of convenient size; say from fifty to a hundred, bury them in the ground, selecting a dry place, and surrounded with a little ditch—cover well with soil, and over that put a thick covering of litter or of manure.

Before planting, have your ground well spaded, two feet deep, and enriched with rotted manure. In April begin to plant—make a straight furrow eight inches deep. If you are not on sandy ground, and if you can get sand, it would be well to spread a little in the bottom of each furrow. Lay your cuttings slanting to the furrow, so that the upper eye is just covered with the surface soil; fill your furrow half full, treading the soil with the foot round each cutting, then fill the rest of the furrow. Make your next row about one foot from the first, and so on over the whole piece. If convenient you had better put on a mulch, of say two inches or so of dead leaves. This will be a great help in carrying your cuttings safely through the summer drought, and it keeps down the weeds. If you want to make your success more certain, it will be well to give your cutting bed some sort of shelter to keep off the sun. Drive stakes into the ground, upon which lay poles, and on them twigs or branches of trees having the leaves left on, when cut green. Leave this shelter until your cuttings have made a growth of two or three inches, removing the shelter during a “cool spell,” or just before a rain storm. Keep the weeds down. The dead leaf mulch should be put on in this case, and if too dry, frequent watering will pay you well. If your cuttings have been good, you should not lose more than 5 per cent of them. If you plant varieties liable to mildew, I would advise you to have your shelter on until August, for shelter is often and most always a perfect preventative to mildew.

Mr. President, you have now my secrets on grape culture, and you see they are simple enough. In this business, as in all others, the principle required by one embarking, is common sense, no fear of work and unswerving perseverance. With these, any man can succeed. I trust these few disjointed remarks may encourage more than one to join us in the great work we have in hand.

CURIOSITIES OF VEGETATION. — No. I.

THE phenomena of vegetation afford unlimited subjects for study and admiration. The moss which is heedlessly crushed under our feet and the towering forest-tree are alike subject to laws in their reproduction and dissemination, and these laws are invariable. A brief account of a few of the remarkable phenomena of the vegetable kingdom may prove both useful and interesting to our readers.

The reproduction and dispersion of plants are often performed in curious ways. The *Cardamine Impatiens* projects its ripened seed to a considerable distance, when touched, and thus accomplishes its dissemination as well as its perpetuity. The same process is observable in the squirting cucumber, the geranium, the common broom, and some other plants. The Mangrove holds fast its berries till they send down long, thread-like roots into the soil below. Many plants send forth runners, and it is interesting to observe how these give out shoots at about equal distances, where the soil is favorable, while they push their way over hard or stony ground, refusing to put out a single bud until a genial spot is reached. The strawberry is a familiar instance of this. Other plants, as the bramble and honeysuckle, send out branches which bend downwards till their extremities touch the ground, where they take root. Many leaves, as those of the orange, when they fall upon the ground, take root, and become new trees or plants.

Cultivation produces surprising effects upon vegetable productions. Potatoes, as found in their wild state, are small and scarcely eatable. Carrots are slender plants, not much thicker than a quill, and of a yellowish-white color. The Dahlia, on the other hand, under cultivation has lost one-half of its natural height. The trees of a valley, when removed to an elevated place, become slow of growth and smaller of size, but the timber is tougher and more durable than when grown in its original habitat. In the same manner, when mountain trees

are transplanted to a valley, their growth may be increased, but their timber becomes softer and less durable. The colors of flowers change by culture in many ways. A blue flower will change to white or red, but not to a bright yellow. A bright yellow will become white or red, but never blue. The ranunculus, originally of an intense yellow, changes into scarlet, red, purple, and almost any color but blue. Sour crabs are metamorphosed by culture into sweet apples—sloes into plums. The wild rose has but one row of petals, but under cultivation it acquires many. The wild anemone is scarcely an inch in diameter; culture has produced specimens more than six inches in diameter.

The *Adansonia*, or Baobab Tree, is the giant of the vegetable world. We have the record of one whose trunk measured one hundred and four feet in circumference. The height of this tree does not exceed fifty or sixty feet, while the branches are about the same length, and when seen from a distance, the vast hemispherical cap of foliage almost resembles a forest. A full-grown *Adansonia*, with its deep green leaves, and large snowy blossoms is a magnificent sight. It attains to a patriarchal age, and it is said there are trees now living more than two thousand years old. It is a native of Senegal and other parts of Western Africa.

The *Ficus Nedica*, or Banyan tree, sends down fibrous roots from its wide spreading horizontal branches, to the ground beneath. These shoots are, at first, as flexible as hemp, and wave like ropes in the air. They take root in the ground, and serve as props to the ponderous branches, and as new trunks for the further extension of the tree. The full height of the Banyan tree is from sixty to eighty feet, and in many instances a single parent stem will extend itself until it covers not less than two acres.

The Dragon-Tree—another gigantic tropical growth—has ordinarily an erect trunk of not more than twelve or fourteen feet in height, which divides into short branches,

each terminating in an expanded tuft of pointed, sword-shaped leaves. There was one of these trees, destroyed by a tempest some forty years ago, in the island of Teneriffe, which measured forty-five feet in circumference, and nearly sixty feet in height, and which was supposed to be one of the oldest living inhabitants of our globe.

The Courbarils, of Brazil, are described as having trunks more than eighty feet in circumference at the base, and sixty feet where the boles become cylindrical. They are said to resemble living rocks more than trees, for it is only on the pinnacle of their bare and naked bark that foliage can be discovered, and that at such a distance from the eye that the forms of the leaves can not be distinctly seen.

There was, and for anything we know, there is still, a cypress at Chapultepec, in Mexico, whose trunk measured one hundred and eighteen feet in circumference. In Buckinghamshire, England, there is a famous yew which has a diameter of about twenty-seven feet.

The Norfolk pine, or Kawri of the New Zealanders, attains a huge size. This majestic tree grows to the height of from one hundred and sixty to two hundred and thirty feet. One is spoken of which measured seventy-five feet round the base.

Among gigantic flowers and leaves, we have the *Victoria Regia*, a water lily, thus described by its discoverer:—"The leaf on its upper surface is a bright green, in form almost orbicular, except that on one side it is slightly bent in; its diameter measured from five to six feet. Around the whole margin extended a rim from three to five

inches high, on the inside light green, on the outside like the leaf's lower surface, of the brightest crimson. The calyx is four-leaved, each sepal upwards of seven inches in length and three inches in breadth; at the base they are white, inside reddish brown, and prickly outside. The diameter of the calyx is from twelve to thirteen inches; on it rests the magnificent corolla, which, when fully developed, completely covers the calyx with its hundred petals. When it first opens it is white, with pink in the middle, which spreads over the whole flower the more it advances in age, and it is generally found the next day altogether of a pink color; as if to enhance its beauty, it is sweet-scented.

The *Victoria Regia* was discovered in the river Berbice, in British Guiana, and named in honor of Queen Victoria. It was successfully cultivated and flowered, first in England, and since then in several instances in this country. Not many weeks since, one was on exhibition in this city in full blossom.

The *Rafflesia Arnoldi* is still larger than the *Victoria Regia*. This colossal parasite is a native of Sumatra, growing on a kind of vine, and having no true stem or leaves. The petals of the flower, as observed by the discoverer, were five in number, of a dull brick red, and covered with yellowish white spots. They and the nectary were from one-fourth to three-fourths of an inch in thickness. The flower measured a full yard across, and the nectary was of the capacity of six quarts, while the weight of the whole was at least fifteen pounds.

SPRING FLOWERS.

BY EDWARD S. RAND, JR.

ALTHOUGH the first of March is theoretically the first day of Spring, it is wont in our northern latitude to bring us more chilly winds than balmy breezes, and snow-squalls rather than snow-drops.

It is not till April that we can really set about Spring work, and even then in New-England the newly-plowed fields are often whitened with snow, and in the gardens the crocuses form bright blue and yellow

patterns in the white snow carpet. In the woods and fields the season is even more tardy, and were it not for the fragrant trailing aubutus (*Epigæa repens*), in the pine woods, the tassels of the birches and poplars on the hill-sides, and little patches of starry saxifrage, with occasional blue violets and yellow cinquefoil in sunny nooks, the month of April would pass without its representative wild flowers, save the yellow catkins of the early willow.

Although a ramble in the April woods may to the true lover of nature be a feast of beauty, yet to one who has not learned to read the hidden mysteries which the great book of the woods and fields is perpetually unfolding—who cannot see in swelling buds the germ of future growth, or trace the wonders of slender grass, of spreading lichen or of starry moss, the still leafless branches and dry forest aisles may seem destitute of beauty, and the garden offer greater charms.

And, indeed, it is only in the severe winters that we may not find flowers in the garden from November to May. The frost must indeed be keen that will prevent the "lady's delight" or "heartsease" (*Viola tricolor*), from opening its pretty and ever-favorite flowers, and all through the winter they may be found almost in the melting snow in sunny spots. For those who are fortunate enough to possess the Christmas violet, a choice bouquet of fragrant blossoms may be gathered each day in winter, when the sun can touch the swelling buds, and the Christmas rose (*Helleborus niger*) may always be found hiding under the dark, glossy green foliage. But these are not properly Spring flowers, and only serve as the floral bond which unites the Autumn with the Spring, and which, although lost perhaps for days in the keen, biting winter weather, is never wholly severed. The first Spring flower is the snow-drop, (*Galanthus nivalis*), or "Pierce neige" of the French. At any other season this beautiful little flower would be unnoticed, but as the herald of Spring it is ever a favorite, and receives perhaps a warmer welcome than

ever awaits the richest floral treasures which the summer pours forth. The flower opens its nodding bells from March to May, according to its situation, and remains in beauty many days. The general error in the cultivation of this little flower is too frequent transplanting. The bulbs should be planted in October, where they are to remain, and never taken up. As single they are inconspicuous—they should always be set in masses, say twenty to fifty bulbs in a clump. They will soon grow together, and year after year increase in abundance of blossom. The single variety is far prettier and more desirable than the double.

Next we have the crocus in its many interesting species and fine garden varieties, requiring similar treatment to the snow-drop, but oftener needing replanting, as the bulbs grow out of the ground, or are thrown out by the frost.

These flowers have a fine effect planted in the grass of a lawn, or in a grassy terrace. The sod prevents the bulb from being thrown out, and the flowers spangle the grass year after year, taking care of themselves.

Side by side with the crocus, quite as hardy, and far more delicate in its varied colors, is the Persian Iris, which we have fully described in an early chapter.* Among shrubs we have but one representative in early Spring (*Daphne mezereum*), which expands its lilac flowers in early April. Delicately and powerfully fragrant, it is a most desirable plant, and in summer is no less ornamental in leaf and berry. The white variety is less common, and does not bloom quite as early. For a low garden hedge to separate divisions of the flower-garden, this plant is very useful. Its growth is compact, seldom exceeding a couple of feet in height.

But of all Spring flowers the most beautiful is the double red Hepatica (*H. triloba* fl. *pl. rubra*.) The foliage is evergreen, and comes out fresh from the winter's snow. As soon as the warm sun strikes the crown

* Horticulturist, January, 1865, Chap. 7. *

of the plant, the little downy buds which are fully formed the preceding autumn grow very rapidly, and a few days of sunlight develop the bright petals.*

The flower is the brightest red, very durable, and as perfectly imbricated as a camellia; in size about as large as a five-cent piece; the buds are drooping, but the flower erect. The flowers cover the plant, hiding the foliage, and in the sunlight a clump in full bloom is almost dazzling. The blossoms are not fugitive, like the wild varieties, but last more than ten days in beauty. We have had the different blue and white varieties, and the double red, growing side by side for years, and the red always is a week earlier, and lasts a week longer. This little plant would make an exquisite edging for flower borders. The only protection we give it, if not covered by the snow, is a hemlock bough laid over the crown of the plant.

Next after the crocuses come the early Duc Van Thol tulips, which, although very transient are pretty. The treatment is very much that required for crocuses, only they should be planted a little deeper. The bulbs, if undisturbed, flower for many years. The single variety is more desirable than the double, the latter flowering later, and being a confused, inelegant flower.

The Grape Hyacinths (*Muscara botryoides* and *moschatum*) are general favorites. The flowers are small and delicate—blue, white, flesh-colored or brownish—plentifully produced early in April.

A sandy loam is most congenial to these bulbs, though they thrive and multiply in any good garden soil. Singly they make little show, but in clumps are rather effective. The bulbs do not thrive if frequently transplanted. There are many varieties; that with white flowers is the rarest and prettiest.

The common yellow daffodils (*Narcissus Orange Phoenix* and varieties) and all the different species of *Narcissus*, especially the hoop petticoat species, are desirable early spring flowers and do well on any garden

soil. The *Polyantus* varieties require later planting, a deeper soil and a little protection by a covering of litter, or rotten dung during the winter, as if planted early in the autumn they are apt to make a fall growth and get nipped by the frost. The *Jonquil* is a species of *narcissus* (*N. Jonquilla*) and is perfectly hardy; of this there are many varieties, single and double, of which the former are the most desirable they are all delightfully fragrant.

The many varieties of the *Hyacinth*, (*H. orientalis*) are too well known to need description: particular direction for their culture we have given in a former article on Dutch Bulbs.*

As a general rule, all hardy bulbs do better if protected during winter by a cover of litter. It must also be remembered, that the foliage must be grown well to ensure fine bloom the next spring: it should be allowed to die away of itself and never be cut off.

Among the most stately of our early flowers, are the Crown Imperials (*Frittilaria imperialis*). In early April, they push stoutly from the ground, and if the weather is favorable, grow with great rapidity. They require a deep rich soil, and should be strongly grown to produce good flowers. They are even large enough to be effective in clumps on a lawn, and when they die away in the summer, may be succeeded by Cannas and Castor beans (*Ricinus var.*). The yellow orange and red varieties should be planted together for contrast of color; those with foliage marked with gold and silver, are very ornamental, but of lower growth and less sturdy habit. The double varieties are not particularly desirable. The Guinea Hen Flower, (*F. meleagris*) with its curious checkered brown, purple, yellow, or white flowers, is very ornamental. Plant in clumps like a crocus in any good garden soil.

The Persian Fritellaria, (*F. Persica*) is a plant with glaucous foliage, bearing a spike of brownish purple flowers, at the top

* It is now [March 18th] in full bloom in the latitude of Boston.

* Horticulturist, 1864, p. 366.

of the stem. This species when well grown is a very showy: plant like a Crown Imperial, four or five inches deep.

A pretty vernal flower is the Golden Alyssum (*A. saxatile*). It is a dwarf, only a few inches high; a hardy perennial completely covered with bright golden yellow flowers in early spring. It contrasts well with the early creeping Phloxes, (*P. subulata* and *stolonifera*;) with red, pink, white, and eyed flowers, which bloom about the same time.

Anemone pulsatilla, or Pasque flower, though rather later in blooming than many we have described, is properly a spring flower. The blossoms are more curious than beautiful, of a deep purple, with prominent yellow centre: the foliage is very beautiful, and in seed the plant is showy.

A pretty though rare garden flower, is the double variety of our wood anemone (*A. nemorosa* and *Thalictrum anemoneoides*); these plants require a shady, moist place, and are rather difficult to keep.

The Bloodroot, (*Sanguinaria Canadensis*) is easily domesticated, and is one of our earliest spring flowers: though ephemeral, it is very showy, and deserves a place in every garden. It needs a rich soil, and should be transplanted when the leaves die down in the autumn.

Delphinium tricolor is the earliest Larkspur; blooming in May; the plant seldom exceeds six inches in height; the flower is produced in a dense spike, and is of various shades of purple. As a species to hybridize with our later blooming species,

this is a valuable acquisition; it is not a common plant.

The early Pæony (*P. tenuifolia*) is the earliest species; the foliage is ornamental, and the flower, when half expanded, very pretty.

Jeffersonia dipylla is a rare and beautiful spring flower, to which we have called attention in a former article.*

Omphalodes verna, or navel wort, we have also described in the same article.

The dwarf and crested Iris (*I. pumila* and *cristata*) are pretty early blooming species, too well known to need description.

The Primrose, (*Primula polyanthus*) and Cowslip, (*P. veris*) are pretty plants, suited for cool shady situations in the garden, blooming from the middle of April and through May. The flowers of the former are of various shades of brown and crimson, marked with yellow; those of the latter, pale yellow and red: some of the species are double. A good way to procure a stock is from seed, from which very fine varieties are often produced.

The Lungwort, (*Pulmonaria Virginica* and *officinalis*) are very ornamental, flowering in April and May; the flowers are bright blue, and red and blue. All these plants require a very sandy soil; in rich loam they soon die out.

As the month of May comes on we find great additions to the floral treasure of the garden; not only in herbaceous plants, but in flowering shrubs and trees, but even the mention of these must be delayed, till a future article.

*Horticulturist, Jan., 1865, p. 7.

OUR METHOD, No. III.

BY PRATIQUER.

HAVING named our three favorite grapes, we must not be understood to condemn all others, though we deem the larger portion of them as unworthy of general cultivation. Our next choice, still retaining the three colors, are Rebecca, Diana and Concord, but the first two are only for gardens and sheltered situations, the latter for Western

Vineyards: for with such testimony as that of Dr. Edwards and George Husman of Missouri, we must believe it does far better west of the Ohio, than where it originated in Massachusetts, and on the banks of the Hudson. We are sorry that we cannot conscientiously extend this list so as to include many other kinds

under cultivation, but of other varieties already tried, we advise no one to plant Vineyards. Our nostrils are distended and we are snuffing the east wind for greater fragrance, anticipating a golden age, or grape millennium when "no man shall be necessitated in search of his daily food to undergo any other trouble than that of reaching out his hand to pull his sweet and salutary fruits" and when we can gather luscious crops of the so highly lauded new varieties, now on probation. Let us do all we can to hasten this happy time, it will not come any too soon with all our efforts, but in the mean time don't neglect the varieties that are known to succeed in your neighborhood, even if that should be the despised Clinton, really one of our best wine grapes. The public taste is being educated for something better, and we must keep up with it: *proving all things* and holding fast that which is good: though we confess our faith would be stronger, with less extravagant puffing: less blowing of trumpets: fewer threats of suits at Law; and with more of (a greek word meaning) "that which will endure to be held up to and judged by the sunlight." We therefore advise our readers to plant one or more of the Adirondac, Iona and Miles, thus imitating the patience of him who bought the Raven to *see* for himself *if*, &c., &c., &c., though we still remember pocket-feellingly the genesis as well as the exodus of the Anna and some other much extolled, but worthless varieties.

Having selected our vineyard, prepared the soil, purchased and planted healthy Vines of the best well tried varieties, and having made it our interest as well as our duty to cultivate the ground by planting root crops that need to be hoed; having without pinching or pruning allowed our canes to grow short-jointed and vigorous, and having cut them down and covered for the winter, we propose, while they are enjoying a season of rest, as necessary to plants as to animals, to cast about and prepare for the future, and this leads us to consider shelter, compost, and materials for training

and tying. We have already suggested planting evergreens, and if this has been neglected, we shall now *insist* upon it. Shelter is too important in our changeable climate to be overlooked, besides its advantages in winter, it is *indispensable in summer*. Tender vines may be made to bear our winters, by laying on the ground and covering with a few spadefulls of earth, even in Canada, but in summer the more hardy kinds are exposed to the cold currents of air so injurious to the grape vine especially if they come while the atmosphere is charged with moisture on a hot day. It is a well known fact that when our summer atmosphere is saturated with moisture, a sudden depression of temperature will produce rain, the atmosphere at 100° retaining four times as much moisture as when at 50°, thus producing the most favorable conditions for the developement of blight and mildew and perhaps of rot, indeed we have constantly been looking in the wrong direction for our failures, and need feel no surprise that our left handed efforts to remedy them have also failed. The winter protection is well enough, but the quicksands upon which we have grounded and are still floundering, are insane summer pruning and a lack of summer protection. Witness the hardihood of grapes grown in City yards and under the shelter of buildings. The case of the Johannisberg Vineyard is one in point. Finding that the finest grapes on that estate grew under the shelter of the castle walls, the proprietor surrounded the whole property with a stone wall ten feet high, thus forming a perfect protection from drafts of air, that so often in our climate, check the circulation suddenly, and induce disease, especially if our vines were originally feeble or were previously weakened by summer pruning, or overcropping. Surround the vineyard then with evergreens. Young plants of hemlock, arbor vitae and Norway spruce may be had for a few dollars a thousand, they need not necessarily be planted in compact rows, or closely in contact with the vineyard, but may be tastefully arranged in groups, as

ornaments to the grounds, while affording ample protection; but in the absence of other plans may be set in rows, to be transplanted elsewhere at leisure. In a few years they become large, doubling their saleable value year by year in a compound ratio. No flowing oil well pays greater dividends. Now is the time to plant. Let it be well done before the middle of May.

Our requirements in the preparation of compost are few and simple, consisting of peat or swamp muck and wood ashes, ten bushels of muck to one of ashes, frequently turned and well mixed, and is better, if two years old. On planting young vines we give them the benefit of well rotted stable manure, if well incorporated in the soil, to give them a vigorous start; but when a vine is well established, we prefer not to force it; we dislike an enormous growth of long-jointed, porous, tender, succulent wood, grown only to be cut off and thrown away, and much prefer a cane with smaller, compact wood, short-jointed and well ripened, hence avoid heating unfermented manures, dead carcasses, and the like. Our compost we apply in small quantities and not often, *better none than too much*. The law forbidding the manuring of grapes in the Alta Domo district is, no doubt, founded in wisdom. We might say much more on manures, but a word to the wise (for whom we write) is sufficient. We are for moderation, and are willing it should be known to all men, believing that great injury has been done to grape culture by high manurists. "Our Method" of training is something after the manner of De Breuil, with a slight infusion of the Yankee element (improvements), and this we propose to illustrate by drawings, in its proper place. The materials required are posts, stakes, braces and wire. We select the wood in order, thus: locust, cedar, chestnut, oak, and—in default of either—the best we can get. They should be procured before-hand, and prepared for use by the assistant when he needs an odd job; cut of uniform length; the bark taken off with a drawing knife; kyanized, and piled up on skids, under cover, so as to be all

ready for use when needed; and when so prepared, will be found to have gained one hundred per cent on the former value. Posts should be six inches in diameter at the butt; cut square at both ends; nine feet long, thirty inches of which is to go into the ground; for every trellis, two posts should be notched six inches from the top, to receive the end of the brace. Stakes to be three inches in diameter, at the base, eight feet long, sharpened to be set with a crowbar, to be driven eighteen inches into the earth. Braces selected from the large stakes, to be nine feet long; square at the bottom, and the upper end fitted to the notch on the outside post.

To kyanize, insert the lower ends, for a couple of days, in a solution of ten pounds of copperas (proto sulphate of iron) to fifteen gallons of water, using as a vat, a barrel with one head out. This will insure their preservation for a very long period. The copperas-water remaining is worth all its cost for disinfecting privies, hog-pens, &c., by further dilution and sprinkling, removing all offensive smells. For an acre of ground, which we assume to be nearly square—say 200 feet by 220—there should be 147 posts, 126 stakes, and 42 braces, allowing for twenty-one rows of vines, 180 feet long, which leaves a path of ten feet around the whole field, and that the posts be set 36 feet apart, with a stake in each interspace. In the meantime, our vines, for the first two seasons—say, 1865 and 1866—may be trained up to a common stake, or bean-pole, requiring no care, except to keep the ground mellow, and to be tied up to the pole as they grow, allowing the main shoot and its laterals the largest liberty.

As the wire is not needed yet for a considerable time, we propose to postpone its purchase, fully believing that our readers can buy at half price by waiting. When they do buy, get annealed wire, No. 12, sixty pounds of which contains seven hundred yards in length.

Having started the vinery, let us now plant our Twinery. Don't startle, reader, you are not to raise hemp, turn cot-

ton planter, or manufacture cordage; but simply set out, in some convenient, low ground, 500 cuttings of the purple willow (*salix purpurea*.) Get them from your nurseryman for five dollars a thousand. They should be eighteen inches long, and as large as one's finger. Make a hole with a small iron rod, after plowing the ground; thrust in your willow cutting, and the

thing is done. They grow without trouble. Cut them down so as to force a large number of small, pliant rods from the stools, and you have the strongest, cheapest, handiest material to tie grape vines that can be produced; surpassing in excellence, twine, straw, strips of muslin, ravelled ropes or old rags.

A FEW WORDS ABOUT AN OLD FRIEND.

THE HORTICULTURIST is to me, like an old friend, whom one meets again and talks with, after long years of separation. It used to lie on my father's desk, when my life was freer from care than now. He read it for the sake of Downing the loved and lost; and now, long after the editor and the good man whom I love to honor, have both gone from earth, this old friend comes to me: old it is true, yet seemingly fresher and younger than when we first met. I like this old friend now, as I did not then; perhaps, because the man comprehends its value, better than the boy could. But then, again, it may be because my friend has improved in looks and character. Be this as it may it is an ever-welcome guest.

There always has been poetry in fruits and flowers, and in rural life, but every one cannot catch the rhythm; my good friend the HORTICULTURIST can and does: and this is another reason for renewing our old acquaintance. As it comes to me each month, it seems more than ever alive to the beauty and the glory of field and stream, and fruit and flower. "Dream Life" is to be realized, it seems, in the field, as well as by the hearth stone; and the "Reveries of a Bachelor," are no longer confined to delightful musing over the fragrant weed, but take a wider range among the fruits and flowers of the Eden of to-day; so faint a shadow of the Eden that was, which wedded life helped to consecrate. "Ik Marvel" loses none of his old enthusiasm, even when writing on wet days, from "Edgewood."

The vine-dresser and the florist, can cull the rich fruitage, and arrange the choice flowers of thought, for my old friend, as well as gather the purple clusters of the newest grapes for epicurean palates; or teach the soil to yield its nutriment for the sustenance of rare and choice plants in the conservatory or the garden.

We Americans, tend too much toward the practical; so let us have flowers as well as fruit. There is an æsthetical element in nature, as potent and real as in art. So let us gratify taste, as well as satisfy hunger. The bare stones by the way side are intensely practical; but the divine artist touches them, here and there, with the pencil of nature and the lichens transform them to things of beauty, and thenceforth they harmonize with the poetry of the floral world.

My old friend is not a poor dullard, who goes groping along, with no eye for the beautiful, and bent solely on tearing up the soil; but, on the contrary, as a true votary of nature, finds in all things, something of beauty, of which, even the curse, never totally despoiled any. Witness words like these:—"How the true lover of nature yearns for the opening of Spring, the song of birds, and the first flowers and fragrance. How delicious the early frog-peep. How welcome the crocus, or snow-drop, or violet! How refreshing the pure breath of Spring, and how eagerly is greeted the first warm shower, which starts into life a mass of sweet buds and fragrant blossoms! Who has more exquisite or simple pleasures than

the resident of the beautiful country? Who has cause for higher gratitude to God, than he who dwells among blossoms and fruits, and fragrant flowers?" Such is one of the later voices of my old friend. Do you not see that I have sufficient

reason for renewing our friendship, and for eagerly looking forward to each monthly visitation.

M. B. S.

Passaic, N. J., March, 1865.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

MARCH NUMBER LATE.—When the forms of the March number were ready to go on the press, our stock of paper which had been ordered in ample season, was snow bound on the New York Central, with no probability of an immediate arrival. Our paper being of a size which is not obtainable ready made, we were compelled to order a new lot made in another locality. Notwithstanding this delay, and the fact of February being a short month, and our advertising list unusually heavy, we had a few copies of the March number in the office, on the afternoon of the 1st, our regular publication day. The principal part of our edition, however, did not reach our readers before the 10th. We mean always to be prompt, and if our advertisers would send in earlier, it would enable us to publish even before the first.

WOODWARD'S GRAPERIES AND HORTICULTURAL BUILDINGS.—This work will be ready in the latter part of April; will contain some 60 fine engravings. The matter for this book has been prepared expressly for it, and treats the whole subject in a concise and practical manner. It will be on the same fine quality of paper, and printed in the same elegant style as WOODWARD'S COUNTRY HOMES, 12mo cloth. Postpaid to any address, for \$1.50. Geo. E. & F. W. Woodward, Publishers, 37 Park Row, N. Y.

MR. A. S. FULLER, AUTHOR OF THE GRAPE CULTURIST, transfers his Nursery business, from Brooklyn, N. Y., to Godwinville, New Jersey. Mr. J. W. Cone, Grape grower, &c., of Norfolk, Conn., goes to Vineland, N. J. These gentlemen we suppose go to New Jersey, because the soil, climate, and other attractions are superior to either New York or Conn. As they are both pretty good judges of soil and crops, we think they purchase and settle with their eyes open. It is a good thing to be on easily tilled land, in a genial climate, and tributary to such unsatisfied markets as New York and Philadelphia, even if you do have to settle in New Jersey.

MR. A. J. CAYWOOD, of Modena, New York, has formed a partnership with L. M. Ferris, Esq., of Poughkeepsie, and has removed to the latter place. Messrs. Ferris & Caywood, are making extensive arrangements to continue and extend the Nursery business; they have a fine central position for a large trade.

FRUIT CULTURE.—*Report of the Committee on the Greeley Premiums.*—On Friday evening, Feb. 11, the Committee on "Large Fruits" of the Horticultural Association of the American Institute held a meeting at the residence of Wm. S. Carpenter, Esq., of this city, to consider whether the award of the

"Greeley Premiums" should be made at once, or left open for another season.

The meeting was organized by appointing Dr. J. A. Warder of Ohio, Chairman, and Mr. P. T. Quinn of N. Jersey, Secretary.

At the request of all the members, Dr. Warder and Dr. Sylvester of Western New York, were added to the Committee.

As the premiums offered by Mr. Greeley were made known only a few days before the exhibition of the Horticultural Association of the American Institute in September last, the Committee, in justice to themselves and the public, after freely discussing the relative merits of the fruits already presented, passed unanimously the following resolution:

Resolved, That the award of the Greeley premiums" be postponed until after the exhibitions of the Horticultural Association of the American Institute, to be held in the middle of September, the second Tuesday in November and second Tuesday in December, 1865.

Resolved, That invitations for competition be extended to the growers of all varieties of Apples, Pears and Grapes, except the following kinds, specimens of which have been received by the Committee:

APPLES.—Hubbardston Nonsuch, Fallawater, Conkling's Seedling, Swaar and Baldwin.

PEARS.—Bartlett, Lawrence, Duchess, d'Angouleme, Dana, Hovey.

The object in extending the time from September 15 to the second Tuesday in December is to give persons offering late varieties of fruits an opportunity of presenting them when fully matured.

It was resolved that Mr. P. B. Mead be requested to act with this Committee in awarding the premiums on the Grape, *which, at Mr. Greeley's request, is to be decided by that Committee.*

Mr. Greeley requests persons sending fruit for competition to forward it to the Committee at the American Institute, and

in no case to him. Several lots have been sent to THE TRIBUNE office, which have not reached the Committee.

The Committee then adjourned to meet subject to the call of the Chairman.

JOHN A. WARDER, Chairman.

P. T. QUINN, Sec'y.

JOHN A. WARDER. P. T. QUINN.

CHARLES DOWNING. WM. L. FERRIS.

J. A. WARD. E. WARE SYLVESTER, Committee.

WM. S. CARPENTER.

N. York, February 11, 1865.

CALLA ÆTHIOPICA OR, EASTER LILY.—

Although much has been written of this beautiful plant which is such a general favorite, I frequently find young beginners who do not have access to such books as treat of its culture, disappointed in it, and hear them complain that their plants have abundance of foliage but no flowers.

In all these cases I understand that the cause of failure is this: The plant has not had its season of rest, but has been kept in a growing condition all the year by frequent waterings. It should be turned out of doors about the first of June which is generally after the blooming season, and left to dry in a sheltered place by laying the pots on the side, withholding water entirely except what is furnished by the rain in that condition until the last of August or first of September. By that time their fine leaves are dry and little is left but the root.

They must then be transplanted into rich, peaty earth after taking off the offsets. If single plants are desired put them in small pots, say six inches; but a large pot with one in the centre, and five or six separated around it, makes a pretty show. Place the pots in good sized saucers, and keep the latter full of water, not cold. They will be sure to reward you with their pure flowers in abundance.

M.

BOOKS, &c., RECEIVED.

THE FIELD AND GARDEN VEGETABLES OF AMERICA, containing full descriptions of nearly eleven hundred species and varieties, with directions for propagation, culture and use, illustrated, by Fearing Burr, Jr., Boston, J. E. Tilton & Co. No book heretofore issued by the Agricultural press, approaches this in labor, care and research, in choice artistic illustrations, and superb mechanical execution. It is to author, printer, binder, and publisher, a work that deserves the highest commendation. Standard and reliable authority on the subject of which it treats, it should be possessed by every one who owns or cultivates a farm or garden. A work of instruction and reference to which one may turn for information on any particular vegetable or species. Those who have Agricultural libraries can put this book at the head. Those who have not will find this a first class book to begin with.

THE YOUNG GARDENER'S ASSISTANT, in three parts, containing catalogues of garden and flower seeds, with practical directions under each head for the cultivation of culinary vegetables and flowers; also, directions for cultivating Fruit trees, the Grapevine, &c., to which is added a calendar to each part, showing the work necessary to be done in the various departments each month in the year, by Thomas Bridgeman, Gardener, Seedsman, and Florist; New York, Wm. Wood & Co., No. 61 Walker Street. This is a new edition of a valuable work, by a popular and reliable author, and has been published in a new and attractive style. The opening Spring now calls attention to the Garden, and this is one of the books that can be consulted with profit.

ONIONS AND HOW TO RAISE THEM, by James J. H. Gregory, Marblehead, Mass., author and publisher, 25cts. The onion crop is now one of the most profitable that is grown, and this work of 32 octavo pages gives just the information one desires, who

proposes to raise onions. It contains several illustrations of onions, seed sowing machines, and implements adapted to onion culture. Mr Gregory is first class authority on onions, and this work is desirable.

TRANSACTIONS of the New York State Agricultural Society, with an abstract of the proceedings of the County Agricultural Societies, volume 23, 1863. A voluminous public document of 834 pages, with maps and engravings. Every resource of information on the agriculture of this State has apparently been exhausted.

THREE SCOUTS, by J. T. Trowbridge, author of Cudjoe's Cave, the Drummer Boy, &c.; Boston, J. E. Tilton & Co.; New York, Hurd & Houghton. This is a new work by a popular author; the present war furnishing the material for the subject. The plot is exciting, and the characters well sustained, \$1.75.

ENOCH ARDEN, by Alfred Tennyson; Boston, Ticknor & Fields, paper, 25 cents. A low priced edition for popular reading.

ENOCH ARDEN, and other poems, by Alfred Tennyson; Boston, J. E. Tilton & Co. New York, Hurd & Houghton. Cambridge edition issued in the elegant style so characteristic of these publishers, \$1.50.

1865, Vilmorin, Andrieux & Cie., *Extrait général des Catalogues*. Vilmorin, Andrieux & Cie., *Marchands Grainiers*, 4 (ancien 30) quai de la Mégisserie, Paris.

SPRING CATALOGUE of New Plants, 1865. Dahlias, Verbenas, Petunias, Fuchias, Roses, Geraniums, Phloxes, Chrysanthemums, etc., grown and for sale by R. G. Hanford, successor to A. G. Hanford & Bro., Columbus Nursery, Columbus, Ohio.

DESCRIPTIVE CATALOGUE of standard and dwarf standard Roses, Fruit and Ornamental Trees, Flowering Shrubs, Vines, Greenhouse, Hardy Plants, &c., cultivated and for sale by G. Marc, Astoria, Long Island, N. Y.

PHOENIX'S abridged, priced, descriptive Bloomington Nursery list of Fruit and Ornamental Trees, Plants, Bulbs, &c., with hints for their cultivation, F. K. Phoenix, Bloomington, Ill.

ELEVENTH Annual Catalogue of choice Verbenas, Dahlias, Roses, Geraniums, Fuchias, Heliotropes, Pinks, Lantannas, &c., for sale by Dexter Snow, Chicopee, Mass. 1865.

CATALOGUE of Vegetable, Agricultural, and Flower Seeds, for sale by Brill & Kumerle, Growers, Importers and Dealers, 153 Broad St., Newark, N. J. 1865.

McELWAIN BROS., Catalogue of Seeds, and Vegetable and Flower Garden Manual, comprising a list of all the valuable varieties of American growth, together with many rare varieties and novelties, obtained from the most reliable English and Continental dealers and growers, with special directions for their cultivation. McElwain Bros., Springfield, Mass. price 15 cents.

EIGHTH Annual Catalogue of Plants, &c., cultivated and for sale by Edgar Sanders, containing descriptive lists of Roses, Verbenas, Heliotropes, Geraniums, Petunias, Dahlias, and Hardy Plants, grown at the Lake View Flower Garden, Chicago, Ill. P. O. Box, 4183.

BRUCE'S Great Upper Canada Seed and Nursery Establishment. Descriptive Catalogue of Seeds for the Farm, the Kitchen Garden, and the Flower Garden; also of Culinary Roots, and a choice collection of Flowering Bulbs for Spring planting, with brief hints on sowing, planting, cultivation, &c. John A. Bruce & Co., Hamilton, C. W.

A DESCRIPTIVE CATALOGUE of choice and select Flower and Vegetable Seeds, including splendid assortments of Asters, Balsams, Stocks, Zinnias, &c., with the most approved varieties of Vegetable Seeds in cultivation, for sale by HENDERSON & FLEMING, Seedsmen, No. 67 Nassau Street, New York.

CATALOGUE of the corporation, officers and students of Hamilton College, Clinton, New York, 1864 and 1865. We are indebted to Professor North for this, and extract the following relating to the College grounds:

"The Park, in the midst of which the College edifices stand, embraces fifteen acres. This has been laid out in the modern English method, with trees and shrubs scattered over it, singly and in groups, and with carriage-ways and foot-paths winding through its different parts, giving the visitor a view of the entire surface. The trees, deciduous and evergreen, have been arranged chiefly with a view to their landscape effects, though a classification in families has not been wholly lost sight of. A Pinetum has been begun, in which a large number of the conifers, hardy in this climate, may already be found. Among the Elms, Maples, Lindens, Oaks, &c., we have five or six varieties of each species.

In those portions of the ground daily traversed by the students, plots have been laid off and devoted to shrubs, vines, and flowering plants, some of which are cultivated by the under-graduates.

It is the design of the Trustees and the Faculty to render the Park increasingly attractive from year to year. New trees and plants will be added to the present collection as fast as they can be obtained. And, for the more speedy accomplishment of this end, contributions are invited from the friends of the Institution. It is a pleasure, here, to acknowledge handsome donations already received from various persons, especially those from Mr. Charles Downing, of Newburg; Henry W. Sargent, Esq., of Fishkill; Messrs. Ellwanger & Barry, of Rochester; and Messrs. Hovey & Co., of Boston.

At a late meeting of the Board of Trustees, a vote of thanks was tendered to Prof. Root, Rev. A. D. Gridley, and John C. Hastings, Esq., for their skilful and generous services as Curators of the Collège Grounds."

CORRESPONDENCE.

MESSRS. EDITORS.—Could not you, or some of your numerous correspondents, give us, through the columns of the *HORTICULTURIST*, a plan of a small propagating house? making your description so specific as to enable one, living in a region where we have no architects skilled in the construction of Horticultural buildings, to construct a house that would be likely to prove a success. It is true, the pages of the *HORTICULTURIST* have occasionally presented us with such plans—as, for instance, on page 73 in the volume for 1862, by Mr. Henderson, of Jersey City. But I think all the plans I have seen do not give sufficient detail in their descriptions to enable a novice to construct a house, without some danger of it proving a failure. Is a lean-to house the best? and if so should it face north? It was my opinion that it should; but I see that Mr. Fuller, in his *Grape Culturist*, speaks of having the roof sloping to the south. Is the method of heating by hot water in wooden gutters, as spoken of by Mr. Henderson in the article referred to above, the best method? Would it be a good plan to construct a house, say 18 or 20 feet wide, and 25 or 30 feet long, with a close partition through the centre, from end to end, and running east and west, using the north side for propagating purposes, and the south side for a cold grapery; or for bringing forward plants after they were taken out of the propagating bed? I have had a good degree of success in propagating grape vines in ordinary hot beds, but I want something better. The price of material is so variable that I do not expect you to give an estimate of the cost of a house. But if you will answer the above inquiries, you will greatly oblige at least one cultivator, who finds an especial pleasure in seeing a plant growing under his own care and attention; and I have no doubt many of your country readers would prize such information as much as your subscriber.

G. H. MILLER.

Dec. 24, 1864.

Norwich, Ohio.

For the exclusive propagation of plants, if they were removed as soon as active growth commenced, we should prefer a lean-to house facing the north. For growing plants, as well as propagation, a span roof running east and west would be desirable. Such an arrangement would give a north and south side. The north could be used for cutting beds, and the south for growing the plants. A board partition through the centre, would give to the north house partial protection from the sun, and enable a proper balance between atmospheric and bottom heat to be maintained. A house facing south would receive so much heat from the sun as to make the management of cuttings difficult. On the north, little, if any, shade would be required, and the care and attention be proportionately less. We give a sketch and description of a house lately erected by us for the propagation of grapes, which will answer nearly, if not quite all your questions. Fig. 1 is the ground plan showing dimensions, arrangement of tanks, position of boiler, &c. The foundation is of stone, projecting six inches above the ground, but may be of wooden posts. Three feet of upright boarding, and two feet of glass sashes in front, swung at top for ventilation. Top ventilation is afforded at the ridge by sashes raised by rods from the inside. The roof is fixed, that is, composed of sash bars extending from plate to ridge, in which the glass is set. Bottom heat is obtained from wooden tanks made of $1\frac{1}{4}$ inch stuff, two feet wide and six inches deep, with a division in the centre to separate the flow and return water. The top of tanks are covered with roofing slate laid closely together, and the joints carefully cemented to prevent any escape of vapor. Half-inch boards are sometimes used in covering tanks, but do not radiate heat as well. Sand is placed directly upon the slate, and the pots containing cuttings plunged into it. The smoke from the boiler is carried the whole length of the house on one side, under the

tank, through vitrified drain pipe, and then passes into the chimney. Considerable heat is also obtained from the back of boiler and connecting pipes, the partition being built over the boiler, leaving only fire and ash-pit doors inside of boiler pit. Nearly all the heat is thus economised. Tanks alone are insufficient, when covered by sand,

to keep the temperature of the house above the freezing point on cold nights. It would be desirable to have a four inch iron pipe entirely around the house, and the heat regulated by a valve—in this case expense was an object, and it was left out. In the south division, tanks are also used, covered with slate as before, but no sand. A table

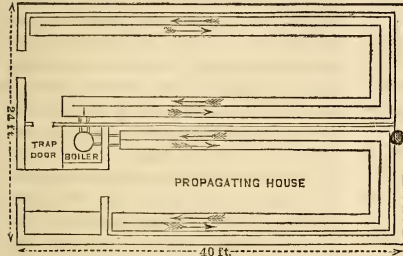


FIG. 1.

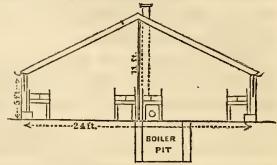


FIG. 2.

of slats placed two inches apart, and above the tank 2 inches, is built, on which the pots rest. This disposition allows the heat radiated from the slate to diffuse itself through the house. Each house can be worked independently, or both at once, by means of slides or gates in the tanks, shutting off the water from either, at pleasure. The propagating house can be started first, and when necessary to pot off the plants, both may be used in connection. Where the question of expense is not considered, hot

water in iron pipes will be found the best for general use in propagating and heating. Tanks are less expensive, and with proper management work well, but if not carefully put together, are troublesome on account of leakage. Those of brick and cement are a constant source of annoyance. A brick flue in a house of moderate size will answer a good purpose, if rightly managed, and on the score of expense, has the advantage of other modes of heating.

MESSRS. EDITORS:—In regard to the mooted point contained in the communication of Mr. F. K. Phoenix, in your January No., page 28, I will state as my experience, that I have received in several instances, plants in midwinter without injury. I received in February, 1863, several boxes and a bale of shrubs, plants and bulbs from Paris. They arrived in New York, on the 15th February, remained several days in the custom house, and were several days on the road from New York here. They were well packed in very damp moss, but of course were completely frozen. I allowed them to

remain in the packages and thaw out gradually in a close cellar, excepting the bale, which was opened immediately, and the shrubs packed in sand and moss, the sand covering the roots and the moss covering the tops. I did not find one plant in the whole lot that was injured in the least by the frost. There were Dahlia roots in one box, which were not injured. Again last winter, I received a lot of Greenhouse Plants, which were shipped on Dec. 17th, at Boston, arriving here Dec. 21st. These were also completely frozen. After thawing in the cellar unpacked, on being opened,

I found that none had been injured, excepting a few Begonias, (hothouse plants) which afterwards revived. I could, if it were necessary, mention many instances where I had received plants frozen, which were not injured in the least. I have known Apples and vegetables to be frozen hard, without the least injury where they were thawed out gradually in tight barrels in a close cellar.

How far plants may gradually have their roots exposed to the air and extreme changes of the weather, I have not experimented, but the process when successful dwarfs or stunts the Tree.

In my opinion, all hardy and most of tender plants may safely be transported in the severest weather, if properly packed in well dampened moss, if the packages are not opened to warm air, but thawed very gradually in a cellar where the heat is low. Rather than receive plants, &c. in warm weather, I prefer to receive them frozen, if I have cellar room to store them.

W. D. STROWGER.

Oswego, Feb. 16, 1865.

TO THE EDITORS OF THE HORTICULTURIST.—You give us a good deal of valuable information in your paper, on the subject of raising Fruits, grapes included.

Now, cannot you put us in the way of making our own sugar? I hear that a great quantity of Sorghum is raised in Orange County, and that beets for sugar are extensively cultivated in other parts. But what is to be done with them after they are raised? Cannot you put us in the way of having these things converted into sugar? Would it not be profitable for each neighborhood to have its sugar mills, as well as its flour mills? Think of the matter, Mess. Editors, you who have a genius for many things, and try to help us in this difficulty.

Let us hear what your opinion is, in the April number of your excellent paper, and oblige

AN OLD SUBSCRIBER.

Will some of our correspondents furnish the information?—EDS.

REID'S NURSERIES, ELIZABETH, N. J.

February 9th, 1865.

MESSRS. EDITORS:

Gentlemen:—In reading an article entitled, "Trees and Shrubs of beauty, for a place of small extent," published in Feb. number of the Horticulturist, I noticed the following sentences:

"For a Hedge to turn Cattle, we have nothing better than the Buckthorn, and need nothing better." "Just now *interested parties* are stunning the public ear with appeals, in behalf of the Honey Locust, or three thorned Acacia, for a Hedge plant Nature intended the Honey Locust for a tree, and nature's intentions are not so easily defeated as some men seem to think." "The man who surrounds his fields with the Honey Locust, in the expectation that they can be kept loyal to the humble condition of hedge plants, should retire from other cares, and devote himself to the shears," &c., &c.

The above is purported to have been read from an essay, by Prof. North, of Hamilton College, at one of the meetings of the Clinton Rural Association.

It is with a great deal of diffidence that I notice the above remarks; but as they are so manifestly calculated to mislead the public, I feel constrained to reply to them.

The Prof. condemns the Honey Locust because it is a tree, and in the next paragraph, you will find that he highly recommends the Hemlock and Arborvitæ for Hedging, which are also trees. He might also say the same of the Norway Spruce, which makes a most perfect and beautiful Hedge; yet if left to its own inclination, will grow to a large tree.

Now Messrs. Editors, I advocate the Honey Locust, and confess myself an interested party, not from mercenary motives, but because I feel that it is to the interest of those about planting Hedges to introduce that which is most desirable for the purpose intended.

We have proved the Honey Locust to be the *best* without exception for an impene-

trable Hedge. It will turn cattle; the old wood is too hard for them to browse on, consequently it can always be kept in good form.

There is more than a mile of the Honey Locust Hedge on these grounds, upwards of twenty years old, from five to six feet in height, well branched from the ground, close and compact, without a flaw or vacancy. It is perfectly hardy; seldom dies out; always looks smooth, and is a most attractive feature, with its fine foliage and symmetrical form. It only requires cutting twice in each year: (no more) first in the month of June, which is the heaviest cutting, at which time two men with shears can cut from 400 to 500 feet per day. The second cutting is in September, when two men can cut from 1200 to 1500 feet per day, the growth being very light, or it can be kept quite decent with only one cutting, which can be done in June, or midwinter. No more care is required than the above, to keep a Honey Locust Hedge in fine condition, (with the exception of hoeing the ground around the roots once or twice during the growing season).

The Osage Orange is more rapid in its growth, and so irregular that it requires constant attention with the shears to keep it in proper shape.

The Buckthorn is also a very good Hedge plant in some localities. Here it does not do well unless cut early in June; if left uncut 'till July, the sun acts on it in such a manner, that the leaves are scorched, giving the Hedge the appearance of having been burned by fire, leaving irregular spots which makes it rather unsightly. Further North it may do well.

For Evergreen Hedges, I quite agree with the Prof. in recommending Hemlock and Arborvitæ. The former is the most beautiful, but more difficult to establish in a hedge than the latter, which can be grown without much care or skill, and is less liable to be killed by transplanting. The Norway Spruce is too well known to need comment, and is rapidly gaining popularity for Hedging purposes.

The late proprietor of this Nursery, Wm. Reid, (deceased) having a love for the beautiful as well as useful, and foreseeing the great necessity of having a good reliable hedge plant for farms or gardens, planted specimens of almost everything that suggested itself to his fertile mind, and at the present time there are on these grounds, specimens of the following varieties, which are living monuments to his memory:

Honey Locust, (or three thorned Acacia.)	} <i>Deciduous.</i>
Cydonia Japonica, or Pyrus Japonica.	
Osage Orange.	
European Beech.	
Buckthorn.	
Privet.	} <i>Evergreen.</i>
Red Dogwood.	
American Arborvitæ.	
Hemlock Spruce.	
Norway Spruce.	
White Cedar.	
Red Cedar.	
American Holly.	
Tree Box.	

The above can be seen at any time by those who wish to examine them, and judge for themselves.

In conclusion, I would state, that the Pyrus Japonica is the finest deciduous plant for ornamental hedges we have. In the Spring, with its beautiful scarlet or white flower, presenting a most unique and beautiful appearance. It also makes an impregnable hedge to cattle, &c., but owing to the cost of propagation would be rather expensive for a farm hedge.

N. B.—Being a novice in the art of writing articles for publication, I trust you will excuse the plainness of these remarks.

Yours, very respectfully,

DAVID D. BUCHANAN.

Successor to Wm. Reid.

"BRIGHT BANK," ULSTER Co., N. Y.
MESSRS. EDITORS:—

I propose to say a word on the never failing topic,—“my Grapes,”—and in the order of their ripening.

Hartford Prolific, ripe 25th August. This variety is popular with my family and friends, and a good bearer—drop easy.

Rebecca—ripened at same time. This grape is a favorite; a beautiful leaf, early, very pleasant, and prolific; skin rather tough.

Concord—ripe Sept. 4th. This variety, I think, is one of the best. An abundant bearer, large, and good flavor.

Delaware—Sept. 8th. Best of all.—Enough said.

Union Village—Sept. 10th. A pleasant grape, but its location is poor with me.

To Kalon—Sept. 20th, ditto.

Diana—Sept. 20th. Stands with us next to the Delaware, and the last season did the best.

Isabella—Sept. 28th. Fine exposure, good.

Catawba—does not ripen well with us, though they bore well the past year, and we enjoyed them after the others were gone.

Under the best circumstances, for outdoor culture, I tried the Black Hamburgh and Brinkley, and I am *quite satisfied*, that under glass is the place for these.

My other vines, Iona, Israella, Lincoln, Adirondac and Allen's Hybrid, have not come to bearing. J. B. S.

HARTFORD, CONN., 13th March, 1865.

MESSRS. WOODWARD:—

A few words about propagating hardy grape vines, from single eyes.

In the fall of '63, I divided a small lot of eyes; a part were carefully laid away in a greenhouse, and at the proper time, were subjected to the usual treatment under glass.

Late in the spring, during a warm, dull day, the other part were taken from the ground, where they had been buried, out of doors, and potted, singly, in small pots. They were then plunged in a border, specially prepared, with a mixture of sand and horse manure, and then covered out of sight, slightly, by shaking over them a dressing

of half decayed horse dung (a sort of hot bed without glass). Both lots grew in about the proportion of nineteen out of twenty. Both were turned out and planted in a vineyard row in summer, but the difference in growth, at the end of the season, was in favor of those propagated without the aid of glass and bottom heat.

I suggest the method, as within the reach of all amateurs who wish to increase their choice varieties without much trouble or expense.

Respectfully yours, &c.,

D. S. D.

MESSRS. EDITORS.—The opening number of your Journal for 1865, has given me much gratification. In it I discover a willingness to discuss both sides of a question, even if it may differ from your own preconceived notions, this is the true idea of progress, allow practical men to state their experience, without discouraging comments, and your Journal will become more popular. Your editorials have always given me pleasure and I *hope* profit.

In my efforts to induce a larger circulation the remark is often made. "If a communication is worth publishing, why not let the reader judge of its merits without prejudice." What we want are sound, well written treatises on Horticulture and the Rural arts to be confirmed or disproved by actual results—and these results are the true gist of the matter. Theories are very good until refuted by practice. It is easier to affirm than to disprove—but when a theory is confuted, if even one of your own favorites, Messrs. Editors, let us have the recantation. Should these remarks be kindly received, I will at a proper time, send you the results of my experience in contrast with the hypothesis of some well known Horticultural teachers.

Respectfully your friend,

COGNITA.

Twin Boulders, January 5, 1865.

THE HORTICULTURIST.

VOL. XX.....MAY, 1865.....NO. CCXXVII.

LACKLAND'S HOUSE PLANS.

UNFORTUNATELY, almost every city gentleman who comes into possession—whether by purchase or otherwise—of a plain country house, from which some honest, well-to-do farmer has just decamped, puzzles his brain first of all, to know how he shall make a “fine thing” of it. My advice to such puzzled gentlemen, in nine cases out of ten, would be—“not to do it.”

If the ceilings be low, and the beams show here and there the generous breadth and depth of timber which old-time builders put into their frames, cherish these remembrancers of a sturdier stock than ours; scrub and paint and paper as you will, but if the skeleton be staunch, and no dry rot shake the joints or give a sway to the floors and ceiling,—try, for a few years at least, the moral effect of an old house. It can do no harm to a dapper man from the city. It may teach his wife possibly some of the humilities which she cannot learn on Broadway. With a free, bracing air whistling around the house corners, and here and there an open fire within, low rooms are by no means poisonous; and if the trees do not so far shade the roof as to

keep away the fierce outpourings of a summer's sun, and the low chambers carry a stifling air in August, it is only necessary, in many instances, to tear away the garret flooring, and to run up the chamber ceilings into tent-like canopies, with a ventilator in their peak—to have as free circulation as in the town attics. And such tented ceilings may be prettily hung with French striped papers, with a fringe-like border at the line of junction of the vertical with the sloping wall—in such sort that your military friend, if he comes to pass a July night with you, may wake with the illusion of the camp upon him, and listen to such *reveille* as the crowing of a cock, or the piping of a wren.

But a monstrous and intolerable grievance to all people of taste lies in the attempt to set off one of those grave exteriors, at which I have hinted, by some of the more current architectural cockneyisms. Thus, an ancient door, with the dark green paint in blisters upon it, and opening in the middle, perhaps, is torn away to give place to the newest fancy from the sash factories, blazing with red and blue glass. For my

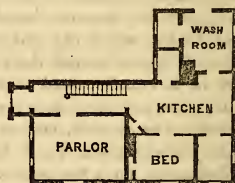
part, I have great respect for a door that has banged back and forth its welcomes and its good byes for half a century; the very blisters on it seem to me only the exuding humors of a jovial hospitality; and all the weather stains are but honorable scars of a host of battles against wind and rain. I would no more barter such an old time door against the newness of the joiners, than I would barter old time honesty against that of Oil Creek, or of Wall Street.

Then again, your cockney must tear away the homely sheltering porch, with its plank "settles" on either side, for some stupendous affair, with columns for which all heathenism has been sacked to supply the capitals.

If renovation must be made, it should be made in keeping with the original style of the house—except indeed change go so far as to divest it altogether of the old aspect. In some farm houses that may be taken in hand for repairs, it might be well even to strain a point in the direction of antiquity, and to replace a swagging door by a staunch one of double-battened oak or chestnut, with its wrought nails showing their heads in checkered diamond lines up and down, and its hinges, worked into some fanciful pattern of a dragon's tail, exposed. Then there should be a ponderous iron knocker, whose din should reach all over the house, and the iron thumb latch—not cast and japanned, but showing stroke of the hammer, and taking on rust where the maid cannot reach with her brick dust. Of course, too, there should be the two diamond lights like two great eyes peering from under the frontlet of the old fashioned stoop. All these, if the house be so ancient and weather stained as to admit of it, will demonstrate that the occupant is among the few who are left in these days of petroleum, who make a merit of homeliness, and cherish tenderly its simplest features. If the house be really weak in the joints, the sooner it comes down the better; but if it has snugness and stiffness and comfort, let not the owner be persuaded of the carpenters to graft

upon it the modernisms of their tricky joinery. I can well understand how a dashing buck of two or three and thirty should prefer a young woman in her furbelows, to an old one in her bombazine; but if the fates put him in leash with an ancient lady, let him think twice before he bedizens her gray head with preposterous frontlets, and puts a mesh of girls' curls upon the nape of her old neck.

I have said all this as a prelude to a little talk about certain changes which my friend Lackland has wrought in his country place—thirty miles away by the New Haven Road. The house he purchased could boast no respectability of age. The height of its rooms was of that medium degree which neither suggested any notion of quaintness nor of airiness. Its entrance hall was pinched and narrow; its stairway inhospitably lean, and altogether its appointments had that cribbed and confined aspect which to one used to width and sunshine, was almost revolting. The wash-room was positively the only apartment below stairs which had a southern aspect. I give his drawing of it, and it is a good type of a great many "small and convenient houses" scattered through our country towns.



"Of course this will never do," wrote Lackland to me, "and yet the skin of the house (as our carpenter calls it) is very good, and I wish to make the needed changes so far as possible, without disturbing the exterior outline of the main building. But how shall I rid myself of that preposterously narrow entrance way in which I can almost fancy Mrs. L., (who is something large) getting wedged on some

warm day? How shall I throw light into that dismal parlor? You will perceive that along the whole south front there is not a single available window below. Now, half the charm of a country place, to my notion, lies in the possession of some sunny porch upon which the early vines will clamber, and under whose eaves the Phœbe birds will make their nests. I want too, my after dinner lounges at a sunny door, where I can smoke my pipe, basking in the yellow light, as I watch the shadows chasing over the grass. About the stupid little design I send you, there is neither hope nor possibility of this.

"Again, even with a dining room, or library added, and perhaps a kitchen, I shall be still in want of further chamber range, which if I gain (as our carpenter suggests) by piling on a story more, it appears to me that I should give to the narrow front of the house an absurd cock-loft look that would be unendurable.

"Mrs. L. and myself have scored out an incredible number of diagrams—all which have been discussed, slept on, admired and eventually condemned. Sometimes it is the old pinched entrance way that works

condemnation; sometimes (on my part) the lack of sunny exposure; and oftenest (on hers) the lack of closets. She insists that no man yet ever planned a house properly on this score. She doesn't see clearly (being deficient in mathematics) why a closet shouldn't be made in every partition wall. She don't definitely understand, I think, why a person should thwack his head in a closet under the stairs. She sometimes (our carpenter tells us) insists upon putting a window through a chimney; and on one occasion (it was really a very pretty plan) contrived so as to conduct a chimney through the middle of the best bed room; and the best scheme of all, to my thinking, positively had the stairs left out entirely.

"In this dilemma, I want you to tell us what can be done with the old shell, so as to make it passably habitable, until we find out if this new passion for country life is to hold good."

Upon this I ventured to send him this little plan of adaptation, which, though not without a good many faults that could be obviated in building anew, yet promised to meet very many of their wants, and gave to Lackland his sunny frontage.



"Here you have" I wrote him, "your south door, and porch to lounge upon, and your south bow window to your library, which if the rural tastes grow upon you, you can extend into a conservatory, covering the whole southern flank of the apartment. The parlor, too, has its two south windows, and although I should have preferred to place the chimney upon the north-east side, to the exclusion of the window

there, yet it seemed best to make use of the flue already established. The hall is well lighted from the north, and will give room for the hanging of any of your great-aunt's portraits, if you have any.

"There is an objection to traversing the dining room in going from the kitchen to the hall door; but it could not well be obviated, with the existing shell of your house, without reducing the size of the

dining room too much, or (another resource) without increasing largely the dimensions of the hall—throwing the intervening space between it and kitchen into store rooms and making the library do duty for the spread of your table.

“The dining room moreover, having only north exposure you may condemn as dismal. I propose to obviate this, and to give it a cheerful south light by an extravagance which I dare say the architects will condemn, but which will have its novelty and possible convenience.

“The fire places of library and of dining room, are, you observe, back to back. Now I would suggest that the two flues be carried up with a sweep to either side (uniting in the garret) in such sort, that a broad arched opening shall be left above the mantel from one room into the other. This may be draped, if you like, with some tasteful upholstery; but not so far as to forbid a broad flow of the warm light from the bow window of the library; while upon the mantels of even height, you may place a Wardian case that shall show its delicate plumes of fern between your table, and the southern sunlight all winter long. It would moreover be quite possible, owing to the breadth of partition wall afforded by the two flues, to arrange folding shutters for the complete closing of the arch-way when-

ever desired. For my own part, I love such little novelties of arrangement, which mark a man's house as his own, however much they may put the carpenters to the gape.

“As for the additional chamber room, never think of putting a third story upon so narrow-throated a house, or you will give it an irredeemable gawkyness. If the space be needed, find it by throwing a mansard roof over all, and lighting your cock-lofts with dormer windows. Then paint with discretion; avoid white, and all shades of lilac—the most abominable color that was ever put upon a house;—you can't match the flowers, and don't try, I beg. A mellow brown or a cool gray are the best for the principal surfaces. In the trimmings study narrowly the gradients of color. Let there be no forced contrasts, and no indecisive mingling of tones; above all, remember that with your elevations, you want to aim to reduce the apparent height; work in, therefore, as many horizontal lines of decisive color as your exterior carpentry will allow; give dark hoods, if you will, to your front parlor windows, and let the cornice-finish below your mansard roof reach well down, and carry dark shading.

“When you are fairly in I will come and see how you look.

Edgewood, March, 1865.”

A CHAPTER ON ORCHIDS.

BY EDWARD S. RAND, JR.

Continued from March Number.

HAVING NOW given the general cultural rules which apply to the great mass of Orchidaceous plants, it now only remains for us to describe those plants which require peculiar treatment—and to prescribe the special culture necessary for the successful growth of each.

Sobralia macrantha.—This is a tall-growing semi-terrestrial orchid, with tall reedy stems producing large flowers, which some-

what resemble a *Cattleya*. They sometimes measure six inches across, and are of a rich purple crimson, but the colors vary much in intensity on the different varieties.

These flowers are produced from the top of the stem, one at a time, and remain in beauty only a few days; but as if in compensation for their almost ephemeral duration, as many as five flowers are frequently

produced in succession on each stem of a strong plant.

This plant is a native of Guatemala and thrives in either the East Indian or Mexican house, blooming during the summer.

It should be planted in a compost of rough fibrous peat, leaf mould, turfy loam, with a slight admixture of silver-sand. All *Sobralias* have strong asparagus-like roots and require large pots. In their native country they grow in marshy ground on little raised hillocks. During the rainy season they have abundance of moisture, the plants then grow and flower; but during the dry season they often become parched.

To grow them successfully, we must thus regulate our treatment; from March to August give abundance of water; from August to December supply it more sparingly, and from December to March give none at all. These plants are easily propagated by division. There are many species all requiring the same treatment, some with blossoms lasting only a few hours in perfection, and some with white, deliciously fragrant flowers.

Dendrobium speciosum.—A fine species with large creamy white flowers, spotted with crimson. This plant is seldom well grown, because it is kept too hot. It is a native of New Holland, where the air is much drier and cooler than in the tropical regions where epiphytes are usually found. It should be grown in the Mexican House, and the maximum of temperature afforded should be 65° in summer, while in winter a minimum of 45° will not be too cold. Like all *Dendrobiums*, the plants require a season of rest.

Dendrobium Jenkinsii.—A beautiful dwarf evergreen species from India, only growing two inches high. The flowers are pale buff edged with yellow, and are very large for the size of the plant. The plant should be grown on a bare block of wood suspended from the roof of the house.

Calogyne cristata is a lovely plant. Pot in a mixture of peat, half-decayed leaves

and silver-sand, and grow in the coolest part of the East India house. The plants bloom in February and should be potted just as they begin to grow.

Calogyne, præcox, Wallichiana, maculata lagenaria, &c., form an entirely separate group and are often called *Pleione*. They are deciduous, forming curiously spotted bulbs. Pot them in loamy peat, leaf mould and sand, and grow on a shelf near the glass in full light. The flowers appear before the leaves out of the same sheath, and when the plants are well grown, are as plentifully produced as in a pot of crocuses.

The leaves should be well grown to ensure good flowers. They need a season of perfect rest and should be planted in small pots.

BARKERIAS should be grown on blocks without moss in the Mexican house at a maximum temperature of 65° and a minimum of 40°. Give plenty of air, syringe frequently while in growth, but give very little moisture during the resting season. The best species are *Skinnerii*, *Lindleyana*, *melanocaulon* and *spectabilis*.

B. elegans, is a very beautiful plant which, if not lost to cultivation, is very rare.

Anæctochilus setaceus.—A lovely terrestrial orchid with variegated foliage, a native of Ceylon. The beauty of the plant is only in the foliage, of which the ground-color is dark velvety green, tinged with a metallic lustre, inlaid with a golden network. A variety (*pictus*) has a broad golden stripe down the centre of the leaf. The plants should never be allowed to bloom as the flowers are inconspicuous.

A. Lobtii, *Lovii* and *xanthophyllus* are very fine species.

These plants are all of peculiar culture. They should be grown in the shade in the East Indian house under bell-glasses, in shallow pots. Drain the pots well, and pot in a compost of sandy peat, fine chopped sphagnum and silver-sand; elevate the plant a little above the rim of the pot, and press the compost well around it. Then plunge the pan containing the plant into

another several sizes larger and fill in all around with sphagnum; rest the bell glass just within the rim of the larger pot, and frequently wipe the glass lest too much moisture collect upon it. During summer, which is the growing season, the plants should have plenty of water, but during the winter months very little is required, it usually being sufficient to moisten the moss in the outer pan. The season of rest should be short and be during the colder months of winter. All the plants are small, varying from two to six inches in height.

Cypripediums should be in every collection: they are all terrestrial orchids and are easily grown in a compost of turfy loam, fibrous peat and leaf mould, with a little silver-sand in well drained pots. There are some fifty species, many of which, such as *acaule*, *parviflorum*, *calceolus*, *spectabilis* and *arietinum*, are hardy and may be grown in a Rhododendron bed in the open air.

C. insignis, a fine Indian species, will live in a green house, but thrives better in the cooler part of the stove: the sepals and petals of the flower are yellowish green, shaded to reddish brown and spotted with dark brown; the centre petal is tipped with pure white, the lip is greenish orange tinged with rich brown. The flowers remain many weeks in perfection.

C. venustum somewhat resembles the last, but is a smaller plant; the foliage is beautifully marbled.

C. barbatum and *purpuratum* have mottled foliage with sepals and petals brownish purple, lip white with reddish stripes.

C. hirsutissimum, *Javanicum*, *Fairianum*, *Louii* and *Stonci*, are very fine species.

The following orchids are all of easy culture and are mostly obtainable in this country at moderate prices.

Acineta Barkerii, from Mexico—flowers yellow—basket culture.

A. Humboldtii, from La Guayra; flowers deep chocolate, spotted with crimson.

Erides odoratum.—A fine orchid from India. Blossoms white, stained with pink; exquisitely fragrant; foliage, light green, ornamental.

Æ. affine, *crispum maculosum*, *roseum*, *quiquevulnerum* and *virens* are magnificent species.

All these plants should be grown in the East Indian house, and require but a short season of rest, and should never be allowed to become perfectly dry; they should be grown on blocks or in baskets, but will do well in pots.

ANGULOA Clowesiana.—Flowers, pure yellow, with pure white lip. From Columbia.

A. Barkerii, from the same country.—Flower, rich brownish orange, with yellowish lip.

A. uniflora, Columbia.—Flowers, white. These plants bloom in summer. Grow in the East India house, but give rest in a cooler house. Pot culture.

ANSELLIA Africana.—A magnificent African orchid. Flowers, pale yellow, spotted with purplish brown, from February to May.

Grow in a large pot, in East India house.

BARKERIAS.—Before described.

BLETIA hyacinthina.—A delicate, pretty little plant, with lilac purple flowers. Grow in peaty loam, in green-house or cool house, terrestrial, and should dry off entirely in summer. There are many species of this genus.

BRASSIA.—A genus of free flowering orchids, from South and Central America and Mexico. Pot culture, with plenty of water in the growing season.

B. Lanceana.—Flowers, yellow, spotted with brown.

B. Lawrenceana.—Flowers, yellow and green, spotted with brown.

B. verrucosa.—Flowers, pale green and white; and

B. Wrayai.—Flowers, yellowish green, spotted with brown, are the best species.

BURLINGTONIA.—A beautiful genus.

Grow in baskets, with moss, in good heat, with plenty of water during growth.

B. candida, Demerara.—Flowers, white in summer.

B. fragrans, Brazil.—Flowers, white and pink in May.

B. venusta, Brazil.—Flowers, white at different seasons.

CALANTHE.—A large genus, mostly evergreen, of terrestrial orchids, which should be grown in pots, in loam-leaf mould and rotten dung. The most common species is *C. vestita*, which is deciduous, producing spikes of white flowers, with yellow or crimson blotches (according to the variety) in winter.

CATTLEYAS are too well known to need description. The following are the best:

C. Acklandiae, from Brazil.—Flowers, chocolate, yellow and rose. Block culture. A rare plant.

C. bicolor, Brazil.—Green and purple. Pot culture.

C. citrina, Mexico.—Bright yellow. Block culture, and should always be tied to the under side, the leaves hanging downward.

C. crispa, Brazil.—Pure white and lake. Pot culture.

C. guttata, Brazil.—Greenish yellow, spotted with crimson; lip white and purple. Pot culture.

C. Harrissoniae, Brazil.—Rose color. Pot culture.

C. labiata, Brazil.—Rose and crimson. Pot culture.

C. Loddigesii, Brazil.—Rose and lilac. Pot culture.

C. Mossiae, La Guayra.—Rosy purple. Pot culture.

C. Skinnerii, Guatemala.—Rosy purple. Pot culture.

C. bulbosa, Brazil.—Light rose. Block culture.

All the cattleyas are fine plants, and worthy of cultivation; during the growing season they do best in the East Indian house, but when at rest should be kept cool. Grow on peat in well-drained pots.

COELOGYNE.—See Ante.

CORYANTHES.—A most extraordinary flower, which words cannot well describe. Grow in baskets in good peat.

C. macrantha, Caraccas.—Flowers, orange yellow, spotted with purple.

C. maculata and *speciosa* are good species.

CYPRIPEDIUM.—See Ante.

DENDROBIUM.—A magnificent genus of

Indian orchids. To flower these plants well they should have a good season of rest and growth; give plenty of heat and water during growth, but little of either when the plants are at rest.

Of hundreds of species and varieties, the following are the best and most common:

D. aggregatum.—Pale yellow. Block or pot culture.

D. calceolare.—Orange, with chocolate lip. Pot culture.

D. Cambridgeanum.—Bright orange; crimson blotch. Basket.

D. chrysanthemum.—Bright yellow; dark red blotch. Basket.

D. chysotozum.—Pale yellow. Pot.

D. Dalhousianum.—Pale lemon, edged with pink, with dark crimson spots. Pot or basket.

D. densiflorum.—Rich yellow. Pot.

D. Devonianum.—Creamy purple and pink; lip rich purple, marked with orange, fringed. Basket.

D. fimbriatum.—Bright yellow, beautifully fringed. Basket.

D. Gibsonii.—Rich orange and bright yellow, with dark spots. Basket or pot.

D. JENKINSII.—See Ante.

D. nobile.—Pink and white, with crimson spots. Pots, basket or block.

D. Paxtonii.—Orange, with dark centre. Treat as *D. nobile*.

D. Pierardii.—Yellowish white. Basket.

D. sanguinolentum.—Fawn color, violet spots; foliage and bulbs lilac. Basket or pot.

EPIDENDRUM.—This is a very large genus, most of the species of which are of little value to the amateur.

They may all be grown on blocks or in pots in the Mexican house.

E. aurantiacum.—Bright Orange. Guatemala.

E. alifolium.—Greenish yellow; white lip. Guatemala.

E. biconatum.—Pure white; crimson spots. Guiana.

E. cinnabarinum.—Bright scarlet. Per. nambuco.

E. macrochilum.—Brown and white. Guatemala.

E. phoeniceum.—Purple and crimson. Cuba.

E. Stamfordianum.—Greenish yellow and brown. Guatemala.

E. varicosum.—Pink and crimson. Mexico.

E. vitellinum.—Orange, scarlet and yellow. Mexico.

GALEANDRA.—A fine genus of terrestrial orchids. Grown in pots, in peat, in East India house.

G. Bauerii.—Pink and purple. Guayana.

G. Devoniana.—Pink and white. South America.

GOODYERA *discolor*, from Brazil.—Grown in a pot, with peat and leaf mould, in either house. Flowers white and yellow; foliage dark evergreen, velvety.

LÆLIA.—A fine genus, requiring the same treatment as *Cattleyas*, which they much resemble, only less heat. They all do well with block culture.

L. acuminata.—White or violet. Mexico. Block.

L. anceps.—Lilac purple. Block.

L. autumnalis.—Purple, rose and white. Mexico. Block.

L. cinnabarina.—Reddish orange. Brazil. Pot.

L. Perrinii.—Purple and crimson. Brazil. Pot.

L. majalis.—Purplish rose. Oaxaca. Block.

LYCASTE.—A class of plants of easy culture, to be grown in pots with peat.

L. aromatica.—Orange; very fragrant. Mexico.

L. Deppii.—White, marked with crimson and yellow. Zalapa.

L. Skinnerii.—White and rose. Guatemala.

MILTONIA.—A beautiful genus. Grow in either house, in pots, with peat.

M. candida.—Yellow, brown and white. Brazil.

M. Clowesiana.—Yellow, chocolate, purple and white. Brazil.

M. spectabilis.—Violet and white. Brazil. The foliage of this species has always a yellow, sickly hue.

ODONTOGLOSSUM.—These plants are best grown in the Mexican house, without much heat or moisture, in pots, with peat and moss.

O. citrosimum.—Pink and white. Guatemala.

O. grande.—Brown, yellow, white and purple. Guatemala.

O. membranaceum.—White and brown. Guatemala.

O. Rossii.—White and purple. Mexico.

All the *Odontoglossums* are worth growing, and are eminent for showy flowers and fine habit. There are many very fine newly discovered species.

ONCIDIUMS.—A large class of showy evergreen orchids. They will thrive in either house, and are easily grown and blossomed.

O. ampliatum.—Large yellow flowers. Guatemala. Pot.

O. Barkerii.—Yellow and brown. Mexico. Pot.

O. bicolor.—Yellow and crimson. Spanish Main. Block.

O. Cavendishii.—Bright yellow. Guatemala. Pot.

O. crispum.—Coppery yellow. Organ Mountains. Block.

O. divaricatum.—Yellow, orange and brown. Brazil. Pot.

O. flexuosum.—Yellow and brown. Brazil. Pot or block.

O. incurvum.—White and red. Mexico. Pot.

O. Lanceanum.—Yellow, crimson and violet. Guyana. Pot.

O. leucochilum.—Yellow and white. Mexico. Pot.

O. papilio.—Brown and yellow. Trinidad. Block.

O. roseum.—Rose color. Honduras. Pot.

O. sphacelatum.—Yellow and brown. Honduras. Pot.

PERISTERIA.—The finest of the genus is the dove plant of Panama (*Espirito santo*).

P. elata.—Grow in rich leaf mould, in peat, in large well-drained pots.

PHAJUS.—A genus of terrestrial orchids, needing rich soil and large pots.

P. grandifolius and *Wallichii* should find a place in every orchid house.

P. albus is a deciduous species, which should have plenty of water during growth, but during rest the plant should be kept perfectly dry, in a cool house, till growth begins.

PHALAENOPSIS.—The finest genus of orchids in cultivation. The flowers are large, white or rose, marked with yellow or red. The plants need the heat of the East Indian house, plenty of water, and only a short season of rest. They do best on a block.

The species are *P. amabilis*, *grandiflora*, *rosea*, *Schilleriana*.

SACCOLABIUM.—A fine genus, resembling *Ærides*, and requiring the same treatment. They are very rare in this country. The best species are

S. Blumei.—Violet and white. Java. Block.

S. guttatum.—White and rosy purple. India. Block.

S. miniatum.—Vermilion. Java. Block.

S. prae-morsum. White and lilac. Malabar. Block.

All do well with pot culture.

SCHOMBURGKIA. A genus of large growing shy flowering plants. *S. tibicinis* is the best. Flowers pink, chocolate and white. Honduras. Grow on a block, with plenty of heat and moisture.

SCUTICARIA Steelii is a plant with rush-like leaves and large yellow and crimson flowers. Guyana. Grown best on a bit of cork.

SOBRALIA.—See Ante.

SOPHRONITIS.—A class of dwarf plants, with brilliant flowers. Best grown on blocks, with plenty of heat and moisture.

S. cernua. Flowers red. Rio.

S. grandiflora.—Flowers bright scarlet. Organ Mountains.

S. violacea.—Flowers violet. Organ Mountains.

STANHOPEA.—A genus of showy plants of easy culture in moss in baskets. There are many species, all worth growing.

S. aurea.—Yellow. Guatemala.

S. grandiflora. White. Trinidad.

S. insignis.—Yellow, spotted with red. Trinidad.

S. oculata.—Pale yellow and purple. Mexico.

S. guttulata.—Pale yellow, spotted with purple. Mexico.

S. eburnea.—Ivory white. Mexico.

S. tigrina.—Pale yellow and chocolate. Mexico.

TRICOPELIA.—A small genus of pretty orchids. Grows in either house, in pots or on blocks.

T. coccinea.—Crimson and white. Central America.

T. suavis.—White and pink. Central America.

T. tortilis.—Brown, yellow and white. Mexico.

VANDA.—A class of scarce Indian orchids, of noble growth and showy flowers. They require the same treatment as *Ærides*.

V. Batemanii.—Yellow crimson and rose.

V. gigantea.—Yellow and chocolate.

V. coerulea.—Delicate lilac blue.

V. Roxburghii.—White and purple.

V. suavis.—White and crimson.

V. teres. Red and yellow.

V. tricolor.—Yellow, crimson, purple and white.

ZYGOPETALUM.—A handsome class of evergreen plants, of easy culture, in pots in peat. They bloom in winter, and are indispensable to a good collection.

Z. Mackayii.—Greenish yellow, brown and lilac. Brazil.

Z. maxillare.—Green, chocolate and rich blue. Brazil.

Z. rostratum.—Green, white and pink. Demarara.

All these orchids we have mentioned may be grown by any one having the appliances described in our former article, and the rich flowers will well repay any reasonable outlay. We very much doubt whether some of the East Indian species can be bought in this country; but there is beauty and variety enough among the South American and Mexican species to well reward any attempt at their culture.

March, 1865.

THE BERRY CULTURE.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

ONE July morning, when my Lawton blackberries were just ready for the pickers, there came to my humble little farm an intelligent gentleman from Vicksburgh, Mississippi, desirous of seeing how fruit-growing in New Jersey was conducted. He was one of those ardent Union men whose goods had been spoiled by disloyal ones at home, his family broken up, and himself imprisoned and condemned to death, a fate from which he escaped by cutting through his prison-bars at night. Until thus ostracised, he had never visited the North, and was thus wholly uninformed of how we, who produced no cotton, could make our agriculture so remunerative. All that he here saw was new as well as surprising. We walked around and over a six acre field of blackberries; he examining, tasting and wondering. He had never before seen a field of cultivated blackberries. He knew that there were thousands of acres of abandoned cotton and tobacco fields in the South, grown up in tangled masses of wild berries; but few gathered the fruit, as no one prized it, nor was it ever sent to market. The wonder was that it was sufficiently saleable here to warrant the cost and labor which he saw bestowed on mine. He considered it the most picayune employment he had ever known to be undertaken. It was neither corn nor cotton—all the agriculture he had ever seen—and, therefore, it must be a small business.

Still, he condescended to inquire if such agriculture paid—if there was a market for the vast crop before him—who in the world bought it, where it was sold, and whether the thing could not be overdone? I told him that my six acres produced an average of \$1,000 per annum; that the great canning establishments in the cities had repeatedly offered to buy the whole crop, and that I was seriously contemplating an increase of my plantation. The figures surprised him, and he thought they made some

approach even to cotton: for, in his small circle of experiences, cotton was the standard for all other values. He began to comprehend how it was that Northern horticulturists were thriving even upon ten acres; that it was by seizing upon those easily-cultivated fruits, which in other sections were wholly neglected, and not only ministering to the public appetite, but stimulating it to increased indulgence. When I told him that some neighbors, within a few miles of me, had been much more successful than myself; that one of them took annually \$1,000 from only two acres of blackberries, he could see that the business of producing such hitherto neglected fruits was worth pursuing, so long as the public called for them.

These discrepancies in crops are sometimes difficult to be explained. By the last annual report of the West Jersey Fruit Grower's Association, it appears that in the four townships of Burlington, Beverly, Chester and Cinuaminson, in Burlington County, there were 488 acres of bearing strawberries under cultivation in 1864. They produced 27,924 bushels of fruit, which produced \$164,633 60. The average per acre was 58½ bushels, and the average price nearly \$6 per bushel. There can be no doubt that the foregoing figures do not include more than half the product of these four townships, as many growers keep no correct memoranda of their crops, while many others are unwilling to furnish particulars. An instance may be cited of a very successful strawberry grower in one of these townships, who, in 1863, produced 1,100 bushels from fourteen acres of ground. His neighbors endeavored to ascertain from him what were his profits, but he was mute. One, more curious than the others, went to his New York agents and obtained the amount of his sales, and then going into a calculation of his expenses, they satisfied themselves that the profit from his fourteen

acres amounted to \$3,000. It may be safely assumed that these four townships received, in 1864, at least \$300,000 for strawberries.

They produced, the same year, 9,181 bushels of blackberries, averaging \$4.80 per bushel, and amounting to \$44,068.80. This is an average of a trifle over 50 bushels per acre. But the whole crop may be set down at double the figures reported, for reasons already stated. An acre yielding 50 bushels would thus produce \$240. But one gentleman, in one of the townships named, sells \$1,000 worth from two acres, or more than double the average of the four. This product is undeniable, as his neighbors are observant of his doings, and he makes no secret of his success. How is this superior crop to be accounted for, or why do not all produce crops equally good? Soil and situation, as well as culture, have much to do with the question, but the controlling agency appears to be heavy manuring. The blackberry is a gross feeder, and, probably, cannot be killed by excessive manuring—at least no such instance has come within my observation. The gentleman referred to feeds his plants well, and that is the prime secret of his success. There is near me, probably, a half acre of blackberries, planted some four years ago in what had been a hog-yard for at least twenty years. The excessive richness of the soil causes the plants to throw up immense canes, which are annually loaded with berries of unequalled size. Manure, also, with cleanly cultivation, was the secret by which \$3,000 were realized from fourteen acres of strawberries. One grower of the blackberry, in Burlington County, now has 15,000 gallons of wine in his cellars, the product of that fruit.

The averages, per acre, above given, are manifestly far behind what they ought to be, and hence the limited supply which reaches market. Why is this so? Crops can undoubtedly be trebled. The President of the Association has raised seventy bushels of strawberries on the third of an acre, and a premium crop, some years ago, raised on

twenty rods of ground, yielded 1,052 quarts, or at the rate of 263 bushels per acre. The President says: "It is interesting to inquire whether these crops were merely accidental, or can as good be grown again? Was there a combination of favorable circumstances, and, if so, what were they? Here is a subject worthy of investigation."

Returning to the blackberry. Its hardiness and productiveness are truly marvellous. Mr. Parry says that he has had them growing on the same ground over ten years without any indications of depreciation, but rather improving. On ten acres of thin land, from which the sand formerly drifted, like clouds before the wind, he produced, in 1862, 650 bushels of fruit, while the following year the same land yielded 700 bushels, and the next year 800. Counting these up at \$3 per bushel, who can say, with propriety, that ten acres are *not* enough?

I have been repeatedly told by farmers, and especially by farmers' sons, such as had no faith in the berry culture, that they could find larger and better blackberries than the Lawtons in every hedge-row in the township. I have challenged them to produce them, promising a reward, but none have been forthcoming. Letters from the South, written before the rebellion, have described similar prodigies. One of these I obtained from Georgia, and a second from Alabama. They were taken by careful hands from the huge old fields that abound in those regions, having been marked while in bearing. Both were described as being superior to anything then known. Both were carefully planted and attended to as pets. The Georgia berry proved to be a good one, but far inferior to the Lawton. The Alabama plant was a total failure. Its fruit was smaller than the smallest pea. Whether these plants were depreciated by change of soil and climate, it would be difficult to say. But the search after novelties continues. Seedlings have been annually planted during many years, but so far with no encouraging result. The new and better berry is yet to come.

CULTURE OF THE ROSE.

BY FRANCIS PARKMAN, JAMAICA PLAIN, MASS.

SOIL AND SITUATION.

THE Rose requires high culture. This belle of the parterre, this "Queen of Flowers," is a lover of rich fare, and refuses to put forth all her beauties on a meagre diet. Roses, indeed, will grow and bloom in any soil, but deficient nourishment will reduce the size of the flowers and impair the perfection of their form. Of all soils, one of a sandy or gravelly nature is the worst; while on the other hand, a wet and dense clay is scarcely better. A rich, strong, and somewhat heavy garden loam, abundantly manured, is the soil best adapted to all the strong-growing roses; while those of more delicate growth prefer one proportionably lighter.

Yet roses may be grown to perfection in any soil, if the needful pains are taken. We will suppose an extreme case: The grower wishes to plant a bed of roses on a spot where the soil is very poor and sandy. Let him mark out his bed, dig the soil to the depth of eighteen inches, throw out the worst portion of it, and substitute in its place a quantity of strong, heavy loam,—rotted sods, if they can be had, will be an excellent addition; and so, also, will decayed leaves. Then add a liberal dressing of old stable manure—that taken from a last year's hot-bed will do admirably. It is scarcely possible to enrich too highly. One-fourth manure to three-fourths soil is not an excessive proportion. Now incorporate the whole thoroughly with a spade, level the top, and your bed is ready.

Again, we will suppose a case, equally bad, but of the opposite character. Here the soil is very wet, cold and heavy. The first step is to drain it. This may be done thoroughly with tiles, after the approved methods; or, if this is too troublesome or expensive, simpler means may be used which will, in most situations, prove as effectual. Dig a hole about five feet deep

and four feet wide at the lower side of your intended bed of roses; in this hole place an inverted barrel, with the head knocked out; or, what is better, an old oil cask. In the latter case, a hole should be bored in it, near the top, to permit the air to escape. Fill the space around the cask or barrel with stones, and then cover the whole with earth. If your bed is of considerable extent, a drain, laid in stone or tile, should be made under or beside the bed, at the depth of three feet, and so constructed as to lead to the sunken barrel. Throw out, if necessary, a portion of the worst soil of the bed, substituting light loam, rotted leaves, and coarse gritty sand. Then add an abundance of old stable manure, as in the former case.

In the great majority of gardens, however, such pains are superfluous. Any good garden soil, deeply dug, and thoroughly enriched, will grow roses in perfection. Neither manure nor the spade should be spared. Three conditions are indispensable—sun, air, and exemption from the invasion of the roots of young growing trees. These last are insidious plunderers and thieves, which invade the soil and rob its lawful occupants of the stores of nutriment provided for them.

A rose planted on the shady side of a grove of elm or maple trees is in one of the worst possible of situations. If, however, the situation is in other respects good, the evil of the invading roots may be cured for a time by digging a trench, three feet deep, between the trees and the bed of roses, thus cutting off the intruders. The trench may then be filled up immediately, but, if the trees are vigorous, it must be dug over again, the following year. It is much better to choose at the outset, an airy, sunny situation, at a reasonable distance from growing trees.

PLANTING.

Roses may be planted either in spring or in autumn. In the Northern States the severity of the winter demands some protection when planted in autumn for all except the old, hardy varieties. Plant as early as possible, that the roots may take some hold on the soil before winter closes. October, for this reason, is better than November. The best protection is earth heaped around the stem to the height of from six inches to a foot. Pine, cedar, or spruce boughs are also excellent. When earth alone is used, the top of the rose is often frost-killed, but this is usually of no consequence, the growth and bloom being only more vigorous for this natural pruning. Dry leaves heaped among or around the roses, and kept down by sticks or pieces of board, or by earth thrown on them, are also good protectors. In spring, plant as early as the soil is in working order, that is to say, as soon as it is dry enough not to adhere in lumps to the spade.

In planting, prune back the straggling roots with a sharp knife, but save as many of the small fibres as possible. If you plant in spring, prune back the stem at least half-way to the ground; but if you plant in autumn, by all means defer this operation till the winter is over. The ground around autumn planted roses should be trodden down in the spring, since the plant will have been somewhat loosened in its place by the effect of frost, but this treading must not take place until the soil has become free from excessive moisture. Budded roses require a peculiar treatment in planting, which we shall describe when we come to speak of them.

PRUNING.

Next to soil and situation, pruning is the most important point of attention to the rose-grower. Long treatises have been written on it; describing in detail different modes applicable to different classes of roses, and confusing the amateur by a multitude of perplexing particulars. One

principle will cover most of the ground:—*Weakly growing roses should be severely pruned; those of vigorous growth should be pruned but little.* Or, to speak more precisely, *Roses should be pruned in inverse proportion to the vigor of their growth.*

Much, however, depends on the object at which the grower aims. If he wishes for a profusion of bloom, without regard to the size and perfection of individual flowers, then comparatively little pruning is required. If on the other hand, he wishes for blooms of the greatest size and perfection, without regard to number, he will prune more closely.

The pruning of any tree or shrub, at a time when vegetation is dormant, acts as a stimulus to its vital powers. Hence, when it is naturally vigorous, it is urged by close pruning to such a degree of growth that it has no leisure to bear flowers, developing instead, a profusion of leaves and branches. The few flowers which it may produce under such circumstances, will, however, be unusually large.

The most vigorous growers among roses are the climbers, such as the "Boursaults" and the "Prairies." These require very little pruning; first, because of their vigor, and secondly, because quantity rather than quality of bloom is asked of them. The old and dry wood should be cut wholly away, leaving the strong young growth to take its place, with no other pruning than a clipping off of the ends of side-shoots and a thinning out of crowded or misshapen branches. In all roses, it is the young, well-ripened wood that bears the finest flowers. Old enfeebled wood, or unripe, soft, and defective young wood should always be removed.

Next in vigor to the climbers are some of the groups of Hardy June Roses—such, for example, as those called the Hybrid China Roses. These are frequently grown on posts or pillars, in which case they require a special treatment, to be indicated hereafter. We are now supposing them to be grown as bushes in the garden or on the lawn. Cut out the old wood, and the weak unripe and

sickly shoots, as well as those which interfere with others. Then shorten the remaining stems one-third, and cut back the side-shoots to three or four buds. This is on the supposition that a full mass of bloom is required, without much regard to the development of individual flowers. If quality, rather than quantity of bloom is the desideratum, the pruning, both of the main stems and of the side-shoots, must be considerably shorter.

Roses of more moderate growth, including the greater part of the June, Moss, Hybrid Perpetual, and Bourbon Roses, require a proportionably closer pruning. The stems may be cut down to half their length, and the side-shoots shortened to two buds. All the weak-growing roses, of whatever class, may be pruned with advantage even more closely than this. Some of the weak-growing Hybrid Perpetuals grow and bloom best when shortened to within four or five buds of the earth. The strong growing kinds, on the contrary, if pruned thus severely would grow with great vigor but give very few flowers.

The objects of pruning are three-fold. First, to invigorate the plant. Secondly, to improve its flowers; and, Thirdly, to give it shape and proportion. This last object should always be kept in view by the operator. No two stems should be allowed to crowd each other. A mass of matted foliage is both injurious and unsightly. Sun and air should have access to every part of

the plant. Six or seven stems are the utmost that should be allowed to remain even on old established bushes; and these as before mentioned, should be strong and well ripened, and should also be disposed in such a manner that when the buds have grown into shoots and leaves the bush will have a symmetrical form. In young bushes three or even two good stems are sufficient.

Pruning in summer, when the plant is in active growth, has an effect contrary to that of pruning when it is in a dormant state. Far from increasing its vigor, it weakens it, by depriving it of a portion of its leaves, which are at once its stomach and its lungs. Only two kinds of summer pruning can be recommended. The first consists in the removal of small branches which crowd their neighbors and interfere with them; the second is confined to the various classes of Perpetual Roses, and consists merely in cutting off the faded flowers, together with their shoots on which they grow, to within two buds of the main stem. This greatly favors their tendency to bloom again later in the summer.

When old wood is cut away it should be done cleanly without leaving a protruding stump. A small saw will sometimes be required for this purpose, though in most cases, a knife, or what is more convenient, a pair of sharp pruning-shears will be all that the operator requires.

(To be continued.)

THE NEW ERA IN GRAPE CULTURE.

BY GEORGE HUSMANN.

IN the February No. of the HORTICULTURIST, I find an article by my friend F. R. Elliott, of Cleveland, Ohio, which, in many respects, evidently hits the nail on the head, in grape culture. While I cannot concur in saying that *all* is bosh which has been said about bone-dust, animal manure, preparing the soil, &c., I still think that the whole

system, as insisted upon by Dr. Grant, Mr. Mead, and others, is not "Grape growing made easy," as it ought to be made to suit the masses, but rather "Grape growing made difficult," and, therefore, will not suit the demands of the age. Let us look calmly and coolly at the facts before us, and try to find what *will* suit.

It is now about eight to ten years since that a new impulse was given to grape culture by the discovery that we possessed varieties of grapes less subject to disease, and in many respects superior in quality to the old standard varieties, the Catawba and Isabella. People found out that they gave surer crops and of higher value than the old varieties; and forthwith commenced the malady which is now so widely spread, and which we know under the name of grape fever, or, as others have it, grape on the brain! People began to believe there was a fortune in every new grape; and found a number of kind gentlemen willing and generous enough to gratify the thirst of something new, by raising varieties from seed, with and without merit, and sell them at high figures, as a special favor, of course.

It is a well proven fact that we have varieties adapted to certain localities and soils, which will give in such locations sure crops every year; and some few varieties seem to have a happy facility of adapting themselves to almost any soil. We have also found by experience, which in such, as in all other cases, is the mother of wisdom, that one variety may fail altogether on a certain soil, where another variety will flourish and thrive remarkably well. Thus we found, as an example, that our Southern stony hill-sides, where the Catawba got sunburnt and scorched every summer, the Norton's Virginia and Herbemont came to greater perfection, and were always fresh and green, whereas the Herbemont did not succeed in our deep clayey loams, where the growth was too rank; and it never fully ripened its wood, yet there the Concord, and in a certain measure the Catawba, succeeded well. A close observation of these facts, obvious to everybody, and of the different habits of the different varieties, first set me to thinking whether different kinds did not also need different preparation of soil. I observed that the Concord made its principal roots near the surface, while the Catawba and Norton's Virginia, to a certain measure, went down with their roots

into the subsoil. So far, all our grape growers had concurred that the only thorough preparation of the soil was by trenching two or three feet deep, and reversing the soil; that is, bring the subsoil to the surface, and the surface earth to where, as they thought the roots of the vine ought to be deep down. This method, of course, necessitated deep planting. The idea struck me that it was somewhat unnatural to bury the grape vine, perhaps the most sun-loving of all our fruit plants, with its roots deep down in the cold subsoil, beyond the influence of sun and air. I began to doubt the necessity of deep trenching and planting, and determined to try a different method.

I was then about to plant a new vineyard on a piece of rough forest soil, newly cleared. Instead of trenching with the spade at a cost of, say \$120.00 per acre, I took a large breaking plough with four yoke of oxen, and made furrows as deep as I could get them, say twelve inches. I had two men to follow the plough with axe and grubbing hoe, to cut away the large roots whenever they obstructed the way; and had a subsoil plough with two yoke of cattle to follow in the same furrow, which loosened the soil say ten inches deeper, making in all a depth of tilled soil of from twenty to twenty-two inches. Six men with six yoke of cattle thus finished about an acre per day, at a cost of about \$25.00. The reader will perceive that this left the soil almost in its natural position instead of reversing it as is the case in trenching. Now for the planting: I concluded that the plants, if they *must* have their roots deep down, would find their own way there after I had mellowed and stirred the soil; I therefore thought I would not plant deeper than ten inches. This I did, much to the disgust of my wise neighbors, who shook their heads and prophesied total failure. But, lo and behold! my vines did *not* fail, but grew lustily, produced well, and the vineyard thus easily prepared is now one of the most thriving, healthy, and productive

in the whole neighborhood. The yield of one-third of an acre of this vineyard I have given in your February number, and I think there will be very few, even if they prepared and manured according to Grant, Mead & Co., which have produced better results.

Now for the after treatment of my vines. The first summer I do nothing with them but keep them clean and the ground stirred up, especially in dry weather. I do not tie them up; I do not pinch off laterals; on the contrary, I allow them to lay on the ground, encourage the growth of laterals which makes the wood much stouter and more stocky, and in the month of July I summer layer the young plants, and generally get from five to seven good layers from each of them, which pays for all the labor the first year, and generally gives a handsome profit besides. In the fall I cut back to two or three buds, as I intend to raise two or three canes the next summer. I now have my trellis made during the winter; I simply take rough posts, if cedar can be had that is best, if not, oak or some other durable timber; these are made seven feet long and three inches in diameter, I put them two feet into the ground, boring holes with a post-hole auger, and nail to them three rough horizontal laths, one, eighteen inches above the ground, the second, eighteen inches above that, and the highest two feet above the second, at the top of the trellis. I make them about one inch broad and half an inch thick. Three middling stout wires stretched along at the same distances will answer just as well, are more durable, and I am inclined to think cheaper. To these I tie the vines, in the second year they will, if cut back to two or three eyes, make two to three shoots, according to their strength. One or two of these I layer again, but the strongest I had up the trellis; and when it has grown about three feet I pinch off its top; this will force the laterals into stronger growth; I leave about four of them to grow unchecked, and they will

generally make very respectable canes. These, in next autumn's pruning, I shorten in as I would a peach tree, say to from four to six buds each, and *they* will produce the fruit the next summer. The other canes which were layered I cut back to, say two buds each, to grow young wood from the next summer, which I then treat in a similar manner, leaving one cane to grow from each spur, which is treated precisely like the one the second summer. I do not layer any more now, but grow fruit and wood alone. By this very simple process I make my vineyard pay expenses, and more, from the first year on; I keep my vines well cultivated, for I can afford to do it as they pay me all the time, and, rest assured, they will bear as fine fruit as when raised on carefully trained arms, with a perpendicular lath each foot on the trellis. I leave it to the reader to decide which they will follow. An acre of Concord vines thus costs, say \$150 for plants, \$50 for preparation of soil and planting, \$150 for trellis, total \$350. The layers pay for the labor, plants, and trellis the first two years, and generally pay a handsome profit besides.

Your readers will now begin to see how immensely we are in advantage at the present day over those who followed grape growing formerly. Then, trenching, planting, plants, &c., cost about \$300, trellis, on Dr. Grant's plan, say \$250 per acre, \$550, with no returns the first two years, and the following years, with a return, at the then prices of wine, diseases with the Catawba and Isabella, about \$250 to \$300 per acre per year. Now, according to my plan, the vineyard pays its way from the first year on, and with a return the third and all following years, of the Concord and Norton's Virginia, of from \$1,000 to \$1,500 per year. Now we have sure crops; then there was no security, as a few days of mildew and rot could sweep away nearly all. Now we have varieties adapted to every climate and soil, for where one will not succeed the other will.

But I am afraid I have already complete-

ly exhausted the patience of your readers by my talk about the new era in grape culture. They are facts, however, not fiction, I can prove it all. Add to this, that the best of grape lands can be had here at from \$6 to \$10 per acre, and you need not be surprised if we cannot raise vines enough to meet the

demand, and Missouri will be one of the grandest of the grape growing states. If your readers should not be entirely weary of my "grape growing made easy" they need but intimate the desire to hear more and another dose is at their service.

Hermann, Mo., Feb. 20, 1865.

WHAT RELATION DOES COLOR HOLD TO THE CONSTITUTION OF PLANTS?

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

THAT color holds some important relation to the vegetable kingdom may be seen from its general brilliancy in healthy growth and its diminished intensity in disease, and the various changes produced upon it by cultivation, climate, season, and soil.

Color not only holds a relation to the *state* or *condition* plants are in, but to their constitution, vitality, hardiness and growth. This may be proved by observation and demonstrated by experiment. Some plants are more hardy than others of the same species (other conditions being equal). This has been ascertained to be in proportion to the amount of heat the plants absorb which is their conducting or electrical power. In other words, the hardiness, vitality and growth of plants depend upon their positive electrical force and the intensity of this state is in harmony with their color, which is in proportion to the amount of heat absorbed, or their conducting power, which has been found to be in the following order: black, brown, green, red, yellow, and white. The black representing the positive state and that which has the greatest absorbing power, and the white representing the negative state, which has the least absorbing and conducting power; and the intermediate colors holding the same relation in like proportion. This theory has been demonstrated by collecting the most hardy and tender varieties from vari-

ous places, with their known peculiarities, and growing them in close proximity to each other, under like conditions in widely different localities, noting accurately their growth, vitality, constitution, hardiness, and shade of color, and the effects produced by climate, location, soil, and the extreme and sudden variations of temperature. To illustrate this subject more fully, we have classified some of the varieties (which may be interesting to the cultivator and observer, and may prove of much value to the inexperienced in selecting varieties for health and hardiness). The following list of Apples we have fully tested by years of experience to be more hardy than the generality of those in cultivation, they having rather dark colored bark, foliage, and fruit.

SUMMER APPLES.

Carolina Red June,	Early August,
Franklin June,	Zoar Benoni,
Red Astrachan,	Early Joe,
Hoosier Red June,	Early Red,
Fourth of July,	Daniel,
Early Juneating,	Early Sweet.

FALL APPLES.

Autumn Strawberry,	St. Lawrence,
Duchess of Oldenburg,	Fameuse,
Herfordshire Red	Republican,
Streak,	King (Southern).
Fall Wine Sap,	

WINTER APPLES.

Sweet Wine Sap,	Campfield,
Red Seek-no-further,	Ben Davis,
Hartford Sweeting,	White Pippin,
Red Russet,	Lady Apple,
White Winter Pear-	Male Carle,
main,	Wine Sap,
Willow Apple,	Holly,
Sciota Beauty,	Royal Red.
Oskaloosa,	

The White Pippin and White Winter Pearmain might be thought to be exceptions to the general rule, but a close examination will fully sustain us, though they might have been classified with the following list for hardiness, yet they have the color of the former :

SUMMER APPLES.

Benoni,	Summer Pearmain,
Hocking,	Keswick Codlin.

FALL APPLES.

Lowell,	Fall Wine,
Monarch,	Northern Sweet.

WINTER APPLES.

Jonathan,	Rawle's Jennet,
Willow Twig,	Carthouse,
Limbertain,	Canada Red,
Talman's Sweet,	Fulton,
Yellow Bellflower,	Red Bellflower.

The Yellow Bellflower, Lowell, Fulton, and Keswick Codlin appear to be exceptions to the rule, they having rather light colored fruit, yet possessing the vitality and hardiness of the others. All the above have strong electrical power, and are in a positive state compared with the following varieties :

SUMMER APPLES.

White Juneating,	May Apple,
Summer Bellflower, Pa.	Oats Apple,
Early Ripe,	Weakley's Summer

FALL APPLES.

Lyscom,	Peach Pond Sweet,
White Spice,	Sweet Yellow But-
Superb Sweet	ter.
Orange Apple,	

WINTER APPLES.

Ortley,	Yahoola,
Belmont,	Willfongs,
Hooker,	Buckman,
Shockley,	Rickman,
Nickajack,	White Vandevere,
Kittageskie,	Sweet Vandevere.

This list is deficient in absorbing and conducting power, they having light-colored bark and foliage, and rather light-colored fruit, and consequently in a negative state and are not hardy.

The same law holds good with the grape. The Clinton, Oporto, Concord, Hartford Prolific, Norton's Virginia, Franklin, Native Hamburg, Amee, and Osee, are varieties which are in a positive state, and possess great absorbing and conducting force, and consequently, are healthy and hardy, having dark foliage and fruit. While the Rebecca, Clara, Allen's Hybrid, Maxatawney, Anna, and Cuyahoga, represent the negative state and have deficient absorbing power, having light-colored fruit and foliage and are not hardy. The Cassady and Taylor's Bullit appear to be exceptions to this class, they having greater hardiness than the rest, and have a more positive character, but not equal to the first list. The Catawba, Diana, and Roger's No. 1, and all of this class having their color, are intermediate, partaking of the character of both, possessing neither the hardiness and constitution of the first nor the debility and uncertainty of the last, and will never withstand the vicissitudes of this climate. This is corroborated by the failure of the Catawba, and the uncertainty of the Diana, and the various conflicting statements of Roger's No. 1. Even the far-famed Delaware does not possess sufficient of the positive character to be certain of success when fully tested by extensive cultivation; here and in Missouri we have some misgivings upon the subject.

The same law holds good with the flowering plants; where will we find a *white* rose in any of the classes equal in health, vigor and hardiness, to those of a dark color o

the same class? Where will we find a white Dahlia, Peona, or Verbena, or any flowering plant, equal in hardiness, constitution, and durability, to those of dark color?

The same law holds good in the vegetable department. Compare the Cabbage, Rad-dish, Broccoli, Onion, Turnip, Potatoes, &c. Or compare the cereals, Corn, Wheat, Rye, and Oats. There is no law of more general application than this, that the health, vitality, and hardiness of a plant depends upon the amount of heat it absorbs, the intensity of which is in proportion to its

color, and this is in the ratio of its positive electrical force. We believe, by observation, that no permanent improvement can be made in the production of new varieties without strictly adhering to these laws of development.

There is some fruit, however; of great excellence, of rather a negative character, which is worthy of cultivation until we produce better sorts. It should be our aim to take advantage of their natural defects, by proper cultivation and training which we may be able to illustrate at some other time.

GRAPE CUTTINGS FROM HISTORY.—No. 2.

BY JOHN S. REID.

ASIA, being the birthplace of mankind, may also be called the mother of the grape-vine. Here was laid out the garden of Eden; here was horticulture first practiced; here was formed many of the greatest empires of the world; here Noah built the ark, and here it rested from its long voyage on the waters; here the Tower of Babel was built, and here was the confusion of language, and the dispersion of mankind; here the Chaldean monarchy was founded, and the great city of Babylon laid out, with its hanging gardens, and its brazen gates; here was the home of the patriarchs, Abraham, Isaac and Jacob; here is the promised land, and here to, was the birthplace of the great Messiah, his life, and triumphant ascension.

No other quarter of the world has so many glorious associations clustering around it as this; and when we add, that Asia was the mother of civilization, of arts, of science, of literature, of all that enobles man, and makes him almost equal to divinity, blame us not if we give her the honor of being the first to cherish and cultivate the grape, and apply its luscious juice to the manufacture of wine.

If we cast our eye over the map of Asia we will discover ranges of mountains, where the *Vitis Vinifera* may be seen growing in all its luxuriance on their southern slopes; but it is chiefly in the balmy region between the Indus and Oxus, the Euphrates and Persian gulfs that the vine flourishes in all the richness of its native clime. Here they not only grow the most luscious of berries, but they make the most aromatic of wines; and although the religion of Mahomed condemns the use of wine, or strong drink, as it is sometimes called, yet very few of the faithful refuse a cup of the sparkling Shiraz. We do not know the exact time when the grape was first introduced into Persia. Our opinion is, that it is a *native* of that country, growing spontaneous on the hill sides, and transplanted to the gardens and vineyards in the valleys, by the rich and the noble.

They are said to be among the finest in the world—suitable either for the table or the wine press. Near Shiraz, some other varieties are cultivated, from which wine of a most excellent quality is made. Some species are black, some red, some of a golden color, whilst a small white grape, almost

without seeds, which grows in the Island of Kishmish, is most esteemed for wine, and it is asserted that it was of this celebrated variety which the Schah of Persia once sent a present to the King of England. In making wine, the Persians tread the grapes in a vat, in the bottom of which are small holes made to allow the juice to escape. It is then transferred to glazed earthen jars, which are placed in a cool cellar, where fermentation takes place. At the end of one month the wine is drawn off and strained, and placed back again into the jars, until it is deemed fit for bottling; when it is put into glass flasks, holding about forty quarts, and there kept ready for sale, or use. Some of the wines of Persia are of a bright amber color, whilst others are red, not unlike our Claret or Bordeaux. The white is of a more delicate quality, rivaling our most choice Rhine. In size of bunch and berry, they are both large; some of the latter being a fair mouthful, whilst some of the bunches weigh twenty pounds. In the province of Cabool, grapes are so plentiful, that the cattle are fed with them—commanding in the market only two cents a pound.

Here also grows the Orange, the Pomegranate, the Date, Peach, Apricot, Cherry, and other choice fruits. The Lemon also is found to grow very plentifully in the mountain vales, with the Fig and Almond tree covered with fruit.

Of grapes, there are ten different kinds grown in Cabool, some of which are raised on frames, not unlike our trellises, whilst others hang from low bushes, or creep on the ground. They are watered during the month of April, and pruned in May, ripening a little earlier than our Delawares or Catawbas.

There are three kinds of wine, which claim superiority over all others. Such as the wine of Shiraz, used only by the Sovereign, or nobles; that of Yezd, a very delicate white wine; and that of Ispahan, distinguished for its delicious sweetness. Odafiz, the Persian Anacreon, sings volup-

tuously the praises of the Grape, and many of his beautiful similies and figures are taken from the vines.

Several fanciful opinions are formed in Persian history, as to the origin of wine, or who in that country was its discoverer. Ferdusi, who flourished in the 14th century, contends that one of their earliest Kings, who reigned over that kingdom, about six hundred years after the Flood, was the fortunate discoverer; and affirms, that he being a lover of grapes, and anxious to preserve some for future use, after the vintage was over, placed some of his most luscious kinds in stone jars, and put them in a vault. Afterwards, when opened, they were found so acid and disagreeable to the taste, that the King believed they had been poisoned, and wrote upon the jars, *poison*. Afterwards one of the ladies of the Harem, becoming unwell, and being almost distracted with pain, in order to rid herself of life, drank of the fermented juice, secretly; but strange to say, instead of it killing her, she felt much better, and continued to drink of it until the whole of the poison was drank up.

Her recovery being well known among the ladies of the court, an enquiry as to the cause, was soon instituted, and she confessed to all that she had done; whereupon the King commanded a double portion of grapes to be again so placed in the jars, and when fermentation had properly been made, and the liquor purified, he and his whole Court drank of the new beverage; and it is still called by all the ladies of the Harem, as the "delightful poison." So much for the origin of Wine in Persia.

In our present description of the grape of Persia, we have embraced an area of country known under this name, in the days of its glory, when Persia was one of the great empires of the East; when the Oxus, the Indus, the Caucasus, and the Tigris were her borders, ranging from latitude 25° to 40° north, and which appears by history, to be one of the most fertile regions of the earth.

Our next remarks will cover Arabia Petraea, and the Holy Land, in which we shall attempt to trace the history of the Vine, from the time of Abraham, to the destruction of the Temple by Titus, in the year A. D. 70, when the power of the Jews as a nation was forever destroyed, and their land became for many years, what might be termed a desolation and a barren waste.

HOME CUTTINGS.

The weather during the months of January and February has been cold, with almost continuous snow, alternating with sleet, so that these months have been rather severe for our small fruit, (except Strawberries.)

I had covered all of my finer grapevines, and think that this protection may save them from the frost. The thermometer was as low down, once, as 10° below zero, but generally steady at 2° above. I examined some of my peach buds, and they are sound. My grapes which stand in the open vineyard, are not destroyed, but several of them look sickly, will know better their true condition after the March winds have dried the earth, and the sun of April awakens the young buds from their slumber of winter, then I may again report.

Indiana, February, 1865.

FRUIT CULTURE IN SOUTH JERSEY

TEN or twenty years ago, if a cultivator of Fruit, either as an amateur or for market, had turned to the then unbroken wilds of South Jersey, to establish a fruit farm, he would have been deemed a fit subject for the mad house, and would have been told that this whole region was but sterile Sand Banks, where even nullens would wither and die; and even now, when Yankee enterprise has brought the wilderness to blossom like the rose, with thousands of fruit farms, strangers attracted thitherward, are told by intelligent Philadelphians and New Yorkers, that "*nothing will grow in Jersey*," forgetting that a large proportion of the finest fruit found in both New York and Philadelphia markets, is grown in Jersey sands.

Four years experience and observation, has convinced me that this section of New Jersey, (say from Camden to Atlantic City, on the line of the Camden and Atlantic Railroad,) is one of the very best locations for growing fruits of all kinds in the United States. Many thousands of acres of land can be purchased at such rates as to make it desirable for all, whether rich or poor, to locate here. The nearness

to the great markets—a sandy, loamy soil, with a strong clay sub-soil, free from stones or waste places, slightly rolling, sufficient for drainage, with abundance of marl and muck beds, to place the whole section of country in the highest state of fertility. The soil is warm and quick, and at this point, Hammonton, thirty miles south-east from Philadelphia, we are several degrees warmer than at Philadelphia. The winters are short and open—snow seldom falling but a few inches, and remaining on the ground but a few days. The lowest that the thermometer has ranged in four years, has been at zero. We have had more cold weather the winter just passed, than any in the recollection of the oldest inhabitants. Fruit buds are seldom killed, and the ever-bearing mulberry of Downing, does not have to be covered.

Much attention has been paid to the culture of small fruits, and many hundred acres of Strawberries and Blackberries have been planted. Of Strawberries, the varieties which have mostly been cultivated, are Wilson's Albany, Triumph de Gand, May Queen and Boston Pine. Now, the Agriculturist, Brooklyn Scarlet, Mon-

itor and Russell's Prolific are being planted. I think the Wilson has less acidity with us than further north. The average amount received from the strawberry crop is \$200 per acre—picking, with us, for market commences about 1st of June. The blackberry seems to thrive most luxuriantly with us, and the yield to the acre is enormous. The Lawton is most generally cultivated, either for wine or market, although some prefer the Dorchester as a market berry, as it is a week to ten days earlier than the Lawton. The average receipts for blackberries last season, was \$250 per acre where the fruit was marketed, and when made into wine, the product was at the rate of \$600 per acre.

A sample of Blackberry Wine, recently tested before the Farmer's Club of New York City, made here, was pronounced *very fine*. It is claimed that both fruit and wine, grown and made here, is superior to any other section of the country.

Considerable attention has been paid to the culture of the Grape, all through this section, and we claim that ten years hence, we shall be one of the greatest wine producing districts in the United States.

On the coast, the Isabella and Catawba are cultivated largely, with general success—are said to be free from rot or mildew, and hold their foliage up to the close of the season. At Egg Harbor City, a German settlement, the Isabella, Catawba and Norton's Virginia are being extensively cultivated. I am informed, that a wealthy association of intelligent Germans, have purchased some twenty thousand acres of land near us, for the culture of the Grape, and Wine making. With us the Isabella, Catawba, Concord, Hartford Prolific, Delaware, Diana, and Clinton have been planted. The Concord is being more extensively cultivated with us than any other variety.

The Delaware has proved with me a strong and vigorous grower, and all that is claimed for it, *the best native grape in America*. The Delaware has mildewed but slightly with me. Last season it began to color on the 1st of August, and was fully ripe by the 25th. The Diana has proved with me next to the Delaware; bunches solid and compact—a strong grower, and free from mildew or rot. The Union Village promises well, and I hope will prove well adapted to our climate. The Anna mildews very badly with me, I not having been able to fruit it. The Concord with us is a very vigorous grower, and a great bearer, but some seasons it has rotted badly. The Hartford Prolific and Clinton do well with us. My vines were struck with mildew badly, 1st of July, 1863, and but slightly in 1864. I discovered the mildew on my young vines last season, on 15th of July. If the experiments of "Horticola" prove a success, he will have conferred a lasting benefit upon the vine growers of the United States. We have not been troubled much with the rose bug, or thrip, but the curculio paid us a visit last season. The Peach grows with us finely, and if we can get rid of the borer, would prove one of our best paying crops. Standard and Dwarf Apples and Pears do well with us, and intelligent fruit growers from all sections of the country say, that they never saw more thrifty or healthy young trees than what they have seen all through this section.

The winters are so short and mild, that any of the above vines do not have to be covered. Ploughing can be done generally every month in the year, and in such a climate with the right kind of soil, and enlightened culture, this whole section of our State is destined to be *the* fruit garden of the United States.

S. B. N.

Vine Cottage, Hammonton, N. J., April, 1865.

CULTURE OF THE PINEAPPLE.

BY GEO. N. STACK, GARDENER TO JOHN BRIDGEFORD, ESQ., ALBANY, N. Y.

VERY few places seem to have the Pineapple. Why is it so? Their culture is as simple as growing strawberries. I think the answer is simply this: expense and ignorance. The former caused in the labor, burning of fuel, and the laying out of money without receiving the benefit of such, and the latter, in lack of judgment or experience on the part of the gardener. There are some places in which no large amount of expense is incurred, and a good supply of fruit obtained; and others on the contrary, cause such extravagant expense that it is enough to frighten any person out of the thought of growing them. Hoping that I will be able to throw some light on the subject to those who are not experienced in their culture, I offer the following suggestions, fully confident that if well attended to they will give general satisfaction:

To grow the pineapple to its greatest perfection, it requires a house suitable for that purpose, such a house should be constructed so as to admit all the light possible to the plants. A three-quarter span 60 feet long, 14 feet wide, (with a pit in the centre 8 feet wide, filled with tan to the depth of 16 inches, and an avaporating tank underneath, having a gradual slope with the roof not more than 4 feet from the glass,) and partitioned off into two departments of 30 feet each, will form a very commodious house; admit plenty of light, easily heated, and each department will hold from 60 to 70 large plants.

SOIL.

Five parts good turfy loam chopped into pieces about the size of a walnut, with one part well decomposed leaf mould, and one part sand thoroughly mixed, forms a compost well suited to the growth of the pineapple, and in which its roots will travel very fast, regardless of danger as far as the soil is concerned.

KINDS TO GROW.

The varieties of the pineapple are numerous, but few however merit general cultivation. The following I recommend as deserving of all care and expense that may be bestowed upon them: Broad leaved Queen, Black Jamaica, New-Providence and Antiguas. There are others of very good quality, but the above named varieties are all first rate.

PROPAGATION.

The pineapple is propagated from suckers, gills and crowns; some kinds are generally backward in producing suckers, such as Providence plants; when such is the case plants should be turned out of the pots, (as soon as done fruiting of course) and a few of their lower leaves cut off, the rest, cut in rather close, and about three inches of the old stump cut off and potted in 32 sized pots, and treated as suckers, when they will produce two or three good suckers. By this method all shy breeding sorts may be increased.

CULTURE.

Having got all suckers, gills, or crowns that are wanted, place them in a convenient place in the pine house under the full exposure of the sun, for about a week, after which pare the stump and cut away all the lower leaves that are necessary, so as to fasten the plants in the pots, and pot them in pots according to their sizes, the largest in 32 sized pots, and the smaller into smaller pots. When potted plunge them in the tan bed up to the rim of the pots, with bottom heat of 80°, syringe over head about twice a week. As soon as the sun is going off the house is the best time for that purpose. Do not give water at the roots until they have reached the sides of the pots, and in future as they are in need of it.

As the season declines, lower the tem-

perature. The temperature for winter should be between 55° and 60° by night, and should not exceed 80° by day. In the latter part of March or early in April, turn the plants out of the pots, and cut away about two-thirds of their roots; pot in the same sized pots and plunge back in their former position, keeping them rather close, but not allowing the temperature to exceed 90° for a few days, until they have again taken root hold, when they should be watered more freely, the temperature gradually increasing. I have known the temperature to rise to one hundred and fourteen, the thermometer covered, without the slightest injury to the foliage. As the season advances, sprinkle the plants over head more frequently; in very hot weather every other day. About June they should be potted into 16 size pots, balls entire. This time the tan will need cleaning, and a fresh supply added to it. This done, the plants should again be plunged. About August give them their final shift in 12 sized pots, and when potted the soil should at the very least be one inch below the

surface of the pots. The plants having received their last shift should show fruit in September. As the season declines, the temperature should be lowered as previously directed, and in bright sunny days, syringing about twice a week, to take the mouldiness of the fruit, which is caused from the humidity of the atmosphere. About February, the fruit will begin to color, when the temperature should be raised to 65° and 70° at night, and may reach 100° by day, without injury, and in April, the fruit will be fit to cut.

Growing the pineapple in beds of soil is not much practiced, but by this mode, fruit can be obtained almost every month in the year, on account of the old plants producing suckers in every stage of their growth. The objections to this mode is, that the fruit is not so large as when grown in pots. When this mode is resorted to the pots should be filled with soil, which need not be more than one foot in depth, and the plants planted 16 inches apart in rows arranged alternately.

FERNS.—No. 1.

IN traversing the country during the months of Summer and Autumn, the eye of the traveler is irresistibly attracted by the extreme beauty of a class of plants which adorn the road side, banks and rocks, fringing the sides of the rivulet with their graceful drooping foliage, or clothing stone-walls, bridges and rocks, with a living verdure of rare beauty. Along the broad margin of the mountain stream, or in the fair green glades of the pleasant woods, these magnificent groups of tufted Ferns may be seen, whose finely cut leaves, of a most vivid green, rising sometimes three or four feet in height, might form a coronal for a forest monarch, glorious in form as in hue. Perhaps, if the ground happens to be marshy, close by these splendid tufts of Fern, the wanderer may

find a regal plant indeed; the *Osmunda regalis*, throwing up its feathery foliage in clusters of branching leaves, from six to ten feet high, which spring straight from the root, dividing as they ascend, into what look like branches, but are in fact divisions of the leaf, called *pinnae*, which droop with a graceful curve earthward. Some of these *pinnae* are terminated by a sort of fingered point of a brownish hue, and of a singular and beautiful appearance.

"What is it?" ask the uninformed who sees it for the first time. "Can it be the eggs which some insect has deposited there? Can it be blossom or seed?" And the like questions he will ask when he gathers two or three leaves, or *fronds* as they are termed, of any other of the various kinds of Ferns

that he meets with in his woodland or mountain ramble, and finds them closely beset on the back with grey or brown spots symmetrically arranged; some down the mid-rib of the leaves, others around the margin of each leaflet; while again on others a mass of this brown substance extends over the whole surface of the leaf.

Perhaps a few very simple rules may aid those who have been delighted with the beauty of the Ferns which adorn their pathway, and as yet are ignorant of the structure of this interesting tribe of plants, to discriminate between their various species, and to view them with other interest than that with which the mere superficial observer looks at them.

"How may we know a Fern from any other plant?" is a question more frequently asked than well answered. It is sometimes replied, and very naturally, if not very correctly, that ferns are plants with very large leaves that grow in moist places. It is true that there are some large leaves which grow in moist places, which are ferns. The great Shield Fern (*Lastrea Felix mas*), the Bracken (*Pteris aquilina*), and some others may be mentioned. But there are also many large leaves which are not ferns, and moreover there are very many ferns which neither grow in moist places, nor have large leaves; for some are so diminutive that their organs and fructification can only be determined by the aid of a microscope, the whole plant often not being an inch long. Ferns of this description are usually found on walls and rocks, some growing out of the driest mortar in the chinks of old walls, and others beneath the dash of the waterfall, on crags, and inaccessible rocks and cliffs.

Loudon gives two distinctions which prevail between the Fern and plants of other orders. The first is "found in the situation of what is called their *Sori*, or patches of reproductive organs, which are in all cases inverted on the back surface of the leaf or frond, sometimes appearing only in the form of little spots, sometimes covering the

whole of the under side of the frond, and sometimes contracting the substance of the frond, so as to give it the appearance of a single mass of fructification." The other distinction is, that "the fronds are always rolled up in a circular manner when they are first developed.

Most observers will have noticed this singular appearance of the young leaves of the ferns in the spring, especially that of the great Shield Fern, whose brown hairy stem when thus beginning to appear, looks like a large brown caterpillar rolled up, and as it develops, assumes the form of a crosier, or shepherd's crook.

The whole tribe of ferns—natural order, Felices—is divided into two parts. The first includes those whose thecæ, or little masses of seed vessels, are provided with an annular ring, by the operation of which the caps containing the seeds are torn asunder and the seeds dispersed: these are called *Annulate*. The second includes those which have no such provision, and these are called *Exannulate*. The "Flowering Fern," (*Osmunda regalis*) the "Moonwort," and the "Adder's Tongue" belong to this latter class, while nearly all the other species are to be included in the former. This class, the *Annulate*, is subdivided into two sections. In the one the thecæ are attached in masses to the back of the frond; in the other they are placed in a receptacle situated on the margin of the frond. Each of these two sections contains within itself several families, determined by different circumstances connected with the placing, form, and other variations of the thecæ and their coverings.

Now let us see what are the different parts of a Fern. Each has, first, a root, secondly, a part which connects that root with the fronds, and out of which they spring, which is called the Rhizoma, and is that which in the tree fern forms the trunk; and thirdly, the fronds or leaves. The frond consists of a stem extending from the rhizoma, quite to the apex of the frond, and this is called the *Rachis*. On either side of the main stem, the leaflets, or other ar-

rangements of the foliage are disposed. In some ferns the frond is pinnatifid, that is, the little leaflets are not quite divided from each other. Others are pinnate, that is, having the leaflets quite separate. So variously are the leaflets of the different species of the fern cut and arranged, that it would take too much space to enumerate them.

But though many species of fern may be discriminated at first sight by the form of the leaf, the growth, &c., it is by the venation, and the arrangement of the fructification, that their families and species can alone be determined. The seeds of ferns are not preceded by any visible flower. They are generally produced in the back of the frond in capsules, called thecæ, which are clustered together in little masses situated on the veins at the divisions of the fronds, or on their margin.

This arrangement of the fructification on the back of the frond, seems universal in all the families of the Annulatæ. A few words on the fructification of the other division, the Exannulatæ, and our review of general characteristics will be ended.

The reader will remember, that the distinction between the two divisions is, that the Annulatæ are provided with an elastic marginal ring, to assist in dispersing the seeds, and that the Exannulatæ are devoid of this appendage. Plants of this latter division have their thecæ in a spike, either branched or clubbed, and attached in some species, to a separate frond; in others terminating the leafy frond. Of such arrangement as the last named, is that noble plant, the Flowering Fern.

"The apex of the frond of the *osmunda*,"—says Newman—"is composed of a complete cluster of spikes; these spikes correspond to *pinnulæ*, of which only the mid-vein and a slight marginal ring is present, and to each of the lateral veins, is attached a nearly spherical mass of thecæ; these spherical masses entirely supersede any leafy portion in *pinnæ* so converted. Frequent instances, however, exhibit the base of a *pinnula* in a leafy or barren, whilst the apex is

in a fertile state." It is not, however, every leaf that thus terminates. Some are barren fronds, and they preserve their leafy appearance to the summit of the frond. Of the first division, are the Moonwort and the Adder's Tongue. In the former, a little branched spike of fruit is joined to a pinnate frond, these two members forming the whole plant, which is not usually more than four or six inches in height. The latter consists of a straight spike of fruit issuing from the interior surface of the frond at its base, usually longer than the leafy part, and bearing the thecæ in a double longitudinal row.

The power which ferns possess of multiplying themselves is almost incredible. The Hart's Tongue, which is by no means a large plant, or possessed of a peculiarly high power of reproduction, bears on each leaf—according to Lindley—about Eighty Sori. Each of these consists of from three thousand to six thousand thecæ, each thecæ containing about fifty spores; so that, by a moderate calculation, a single leaf of the plant may produce not less than *eighteen millions* of young plants!

We have endeavored to make this sketch of the general and leading characteristics of the Fern tribe as simple as perspicuity would allow. Still we are aware that to many who have no previous knowledge on this very attractive subject, much that we have said may seem difficult to understand, while we are also aware that to those who have made this interesting branch of the vegetable creation their study, it will be evident that we have given but a rudimentary and imperfect account of the structure of the tribe, and left out much which, but for the fear of overloading and confusing the subject, we should have said. We hope, however, that these few elementary hints may help any one who reads them with attention, to know a fern when they see it.

In the northern parts of the world, ferns are green, leafy productions, which die down to the ground every year, some yielding sooner than others to the influence of

the seasons, but all being renewed from the base of the plant annually. In tropical countries, however, this is not the case. They acquire real trunks, resembling palms, and often rise to the height of forty or fifty feet, without a branch or leaf. Then they throw out masses of most graceful foliage, which wave like feathers in the air, their leaflets being of the most exquisite form and regularity of arrangement. Many of the tree ferns are of great interest, both on account of their beauty, and also of peculiarities in their structure. One of them, the *Aspidium Barometz*, has formed the ground work for many fables, and ignorant people have been induced to believe that, in the deserts of Scythia, creatures, half animal, half plant, have been produced. This deception has been contrived by cutting off

all but a small portion of the stem of a woolly-stalked species, and turning it upside down, when it presents much the appearance of a small animal. It has been called the "Scythian Lamb," and Loudon tells us that the belief in its animal nature, has been increased by the circumstance that the color of the juice of this plant is of a rich bloody hue, which soon becomes thick by exposure to the air.

In the carboniferous strata are found fossil ferns of arborescent kinds, such as do not now exist, and of immense magnitude, some of them appearing to have reached the height of more than eighty feet. The fructification of these extinct species, as well as of the arborescent ferns now existing, is arranged on the same principle as that of our smaller species.

RAISING SEEDLINGS.

BY J. M. MERRICK, JR., WALPOLE, MASS.

ALTHOUGH I had been affected for two or three years with that incurable epidemic, the grape fever, it so happened that I never saw the *HORTICULTURIST* till last January. I was delighted with my new acquisition, found myself in congenial society, and subscribed for the magazine at once. I was especially pleased with Mr. Fuller's remarks about raising vines from seed, for I could sympathize with him when he spoke of the interest with which the little spindling plants are watched, the care with which they are tied up and trained, and the cheerfulness with which a thousand failures are borne, for the sake of one partial success. For the last three years I have been planting seed and raising vines to an extent which has caused my sanity to be doubted by my friends, who regard the grape mania as belonging to the same class of delusions as the *morus multicaulis* humbug, or the famous Tulipomania in Holland. They prophesy that as soon as the crisis is passed the whole thing will cease to interest any-

body, and will vanish like a dream from men's minds and thoughts. I think differently, and therefore I am persecuted. Every extra hot-bed I set up is looked upon with suspicion; the purchase of a few hundred thumb-pots is a wild extravagance; and a little natural enthusiasm in favor of the Iona and Agriculturist, is regarded as the last flicker of expiring reason. However, I keep on, and have got quite a stock of seedling vines, from which I promise myself a great deal of comfort and satisfaction quite willing to be laughed at, and to leave unanswered ironical inquiries as to the probable epoch when the "Great American seedling" will appear.

My experience, as regards the time required for the germination of grape seeds, has already been communicated to the *Country Gentleman*, but I may venture to insert some facts here, as I should be very glad to compare notes with some one else who has made the matter a specialty. I never have succeeded in making an Isabel-

la or a Rebecca seed germinate, although I have planted large quantities. Catawba seed comes up sparingly the first year, and here and there a solitary plant the second. Delaware seed comes up reluctantly, but generally makes good plants the first year. I have planted Concord seed twice, and with very different results; first, I planted whole grapes in October, and not one seed in fifty came up. Last year I planted, in April, a vast quantity of the naked seed, and in June every seed, I should think, came up. Native grape seed from wild vines comes up pretty well the first and second year. In my experiments, perhaps in all, half the seed (native) germinated. Seed from Rogers 19 comes up in rows with about as much certainty and regularity as peas or beans. This fact seems to be derived from the great vitality and energy (so to speak) that the number 19 in common with others of the same list, possesses, and seems to me to form one link in the chain of evidence which shows these vines to be true hybrids. Will some reader of the HORTICULTURIST give us his experience in raising vines, so far as the length of time required for the seed to germinate is concerned? and will he state also what means he used, if any, to hasten the seeds in coming up? Last summer, owing to the dry weather, was very unfavorable for raising young plants. I lost several hundred Concord seedlings; and those I did save were painfully transplanted one by one into three inch pots, put under glass and watered every day to give them strength enough to live over winter. The results that have thus far been obtained by raising seedlings after the method of Van Mons, and more especially by hybridising, have excelled and surpassed all that could have been anticipated or even hoped before-hand, and it seems to me to be almost the duty of every lover of good fruit, to plant at least a few seeds, and contribute his mite towards the general improvement.

The trouble, when a new variety is obtained, seems to be that the old proverb

holds true, about everybody's geese being swans. Even if a man digs up a wild vine in the woods, and plants it in his garden he is apt to consider it of first quality, *because* he dug it up, and if you were to give him a vine growing six hundred feet in a season, and bearing grapes as large as the Black Hamburgh, and as good as the Delaware, he would fail to see that it was better than his.

The ingenious Mr. Samuel Weller, of facetious and immortal memory, remarks that when we say a man has taken to building houses, it is a delicate way of saying he is insane. Some people, now, have a similar saying, except that they use the words "planting grapes" instead of "building houses," but in the March HORTICULTURIST I came across a most refreshing sentence, viz: "Every enthusiast in fruit culture deserves a vote of thanks from the whole people;" and I immediately passed a vote of thanks to myself, and determined to write to the HORTICULTURIST to say that I had done so.

I am not familiar with the newest varieties of grapes to decide whether our most brilliant triumphs heretofore have been gained by planting after the method of Van Mons, or by hybridization; but, however the matter now stands, I am fully convinced that the perfect grape, when it does come, will be a hybrid artificially produced by some painstaking man who settled in his mind what he would have before he planted a seed.

I allude to hybrids here because I wish to ask some experienced horticulturist to tell us, through the columns of this journal what pairs of grapes and of strawberries he would select for crossing with each other. I desire his views especially in regard to strawberries.

Perhaps Mr. Parkman, whose paper in the April number helps to make that the best thus far this year, (I do not say makes it perfect, for the May number with *my* article is coming) could answer this question in a satisfactory manner.

Impatient people sometimes raise the objection against planting seedlings, that "it will take so long for them to come into bearing." This argument reminds me too strongly of my youthful days, when my father gave me a little garden of my own, wherein I used to plant beans one day and dig them up the next, to see what progress they were making, and I tell the objector

he forgets that if he sows seed now in only three years he will have vines in bearing, and each year thereafter he will have a fresh crop of plants, (provided he has planted regularly every season) each one of which will develop new points of interest among which will be (unless somebody else gets it first) the Great American Seedling.

GROWING CRANBERRIES.

WE have heard much and printed much in the *Telegraph*, relative to the growing of cranberries. An effort has been made to show that cranberries can be profitably grown on uplands—that is, without the assistance of water, swamps, or overflowing; and though several instances were given of success, we still hesitate to believe that they could be cultivated on such land with sufficient profit to make it an object. But where there is water to overflow at proper times, or even the ground be naturally moist throughout the season, there is little doubt but that the cranberry can be made one of the most profitable crops grown. Thousands of acres in every State of the Union, now lying worse than idle, could be transformed into the cultivation of this fruit, which would add more to the common exchequer of the farmer, than four times the amount of his best ground, in the ordinary crops. The following instance of the reclamation of a worthless swamp, in Franklin, Massachusetts, will open the eyes of some of our readers:

Something like ten years since, this swamp was covered over with a growth of alders, dogwood, white maples and other swamp shrubs, which covered the ground; they were cleared off, and a ditch cut through the swamp for the brook, which before ran through a very crooked channel. Ditches were then opened from the uplands on each side, which are gravelly and sandy, leading into the main ditch. A dam was constructed across the swamp, which serves

the purpose of flowing it and also that of a road to pass across it. In the winter the swamp was usually flowed, and gravel, this being better than sand, was drawn on to the ice and spread.—Afterwards it was planted to cranberry cuttings, in drills about eighteen inches apart, this, from experience, proving to be a suitable distance apart. How many coverings of gravel have been put on, was not learned; but several, judging from the excavations whence removed.

About twelve or fourteen acres of this swamp have been planted; and so favorably is it situated, that it can be covered with water in a little more than an hour's time. The brook is of such capacity, with the aid of a reservoir above the cultivated ground that the plants can be protected from frost at any season when there is any danger.

The crop of the past season was about 1,100 barrels of very nice fruit, and of remarkable size. I brought away a couple of berries that measured nearly three inches in circumference. The crop was all picked by hand, at a cost of nearly \$2,000. At one time two hundred persons might have been seen in that swamp picking cranberries. It was a lively scene. After they were gathered, they were taken to the house, where they were sorted, that is to say, the soft berries, after winnowing them, were culled out by women and girls, preparatory to barreling.

The fruit has generally been sold so far as it is marketed, at the current price, though some of it was sold for \$15 a barrel. Call

the average price \$10 a barrel, and 1,100 will bring the snug little sum of \$11,000. This beats tobacco-raising out of sight, as the saying is.

One of the peculiar advantages possessed by this over most of swamp lands, is, the facility with which it can be flowed at all seasons of the year, thus guarding the growing crop from both late spring frosts and

early autumn frosts; and besides, gives the power to destroy insects that sometimes infest the vines. Swamp lands that can be quickly flowed and quickly drained, cannot be used more profitably than by growing cranberries, as it would seem by this experience. It is also easily graveled in the winter by flowing it.—*German town Telegraph.*

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

WOODWARD'S GRAPERIES AND HORTICULTURAL BUILDINGS will be ready early in May, about as soon as this May number is in the hands of our readers. This work is a practical and comprehensive one, discarding all theories and exploded notions. It aims to give in a concise manner, all the needed information on all classes of Horticultural Buildings, from the hot-bed to the most elaborate structure, and is the result of a long professional practice in the construction and personal management of such buildings.

NEWBURGH BAY HORTICULTURAL SOCIETY.—The summer exhibition of this society will take place at Newburgh, N. Y., on the 15th and 16th June, 1865, and the Fifth Annual Exhibition on the 27th, 28th and 29th days of September, 1865.

FREE MISSOURI has now organized a State Board of Agriculture, with the following officers:

President, Henry T. Mudd, St. Louis Co.
Vice-President, Geo. Husmann, Gasconade Co.

Treasurer, Fred'k Muench, Warren Co.

Members, Dr. George R. Buckner, St.

Charles; Gert. Goeble, Franklin; Francis Kellermann, Washington; Dr. L. D. Morse, St. Louis; Barnabas Smith, Crawford; M. T. Essex, St. Louis; Chas. A. Newcomb, Jefferson.

Secretary, John H. Tice, St. Louis.

Corresponding Secretary, Dr L. D. Morse, St. Louis.

MARCH 15, 1865.

Stout's P. O., Adams Co., Ohio.

The soil here is a dark rich sandy loam, particularly adapted to the growth of fruit and grapes. Peaches frequently weigh from 12 to 16 oz., and there are Peach trees here that have borne peaches for 30 years. The elevation of our hill tops above the level of the river is over 700 feet. Let me give you for the information of your readers, an improvement in raising Tomatoes: in place of allowing the tomato to branch as they usually do, tie them up to stakes, keeping all the branches pinched off. In this way they will produce more and better tomatoes than by any other mode of cultivation.

Yours truly,

DR. IRA A. McCONNELL.

TOLEDO, OHIO, April 9th, 1865.

Messrs. WOODWARD—I have some twelve acres of Grapes coming into bearing the ensuing summer. I am somewhat in doubt as to what procedure would net me the most: selling them in boxes, or making into wine. I have ten acres planted with Catawba, and two with Delaware. My vineyard is situated on Put-in-Bay Island, Lake Erie; we think this and the adjoining Islands the only places where in this latitude the Catawba becomes *perfectly* ripe. I was much amused at the *net* results of the product of Delaware and other varieties in the March number of the "HORTICULTURIST," especially the 1-3 acre producing \$3,000 worth of plants, at a cost of only twenty-two dollars. If it did not cost them more than that amount in *cash*, the labor was expended somehow, and I *know* that with present prices of labor I could not raise the same number of layers for the sum named. Should you ever be in want of estimates of expenses of raising grapes, as we find it on the Island, I will give the figures, and I trust those that will not lie.

Yours truly,

L. L. LUNGREN, M. D.

We should be glad to have your figures.
—EDS.

LA CRESCENT, Minn., Apr. 4th, 1865.

Messrs. WOODWARD,

I should be pleased to have you invite the author of "Notes, &c. on fruit culture in the Western States" to favor us with the article which he has promised if desired, pointing out some of the most desirable localities for fruit growing at the West, and the varieties that promise best returns; also, the best soil, aspect, &c. Many people in this State profess to believe that fruit growing will prove a failure, but I do not believe it. I am starting an orchard on a south-eastern exposure; started with a few trees four or five years since, and added a few every Spring, and am happy

to state, that they promise success. Therefore, any suggestions from western fruit growers add to the interest I take in your paper.

Yours respectfully,

JOHN S. HARRIS.

MESSRS. GEO. E. & F. W. WOODWARD:—The remarks of your correspondent, in Feb'y number, concerning the Jonathan Apple, reminds me that my attention was lately called to this apple, on a recent visit to Michigan, by Hon. Mr. Sprague, of Kalamazoo. He is an old resident of Michigan, and has paid considerable attention to fruit culture. He speaks in the highest terms of the Jonathan, and recommends it very highly as a hardy tree, and one peculiarly adapted to western demands. The specimens he showed me were handsome to the eye, and excellent to the taste.

Madison, Wis.

W. A. P. M.

WEALTH AND SPLENDOR OF NEW YORK.—If the Californian wishes to realize the splendor of New York, let him start for the Central Park, from the huge palace of white marble on Madison Square, and mingling with the luxurious equipages, which are moving to and fro, drive up the Fifth Avenue. His coachman will have to wait a moment until that Cinderella-like pony phaeton, with its occupants in ball-like costumes, passes, and that silver-embossed carriage with its coachman and footman in imperial green liveries turns the corner. On either side of him and as far as he can see down the streets which run perpendicular to the avenue, he will be astonished at the elegance of the mansions which house the merchant princes of the American Metropolis. Entering the park his eyes are no less charmed at the beauty of the design than startled at the outlines of the magnificent bridges over which he drives. Arriving at the splendid terrace which would be a feature in a royal palace, he descends

from his carriage and mingles with the crowd of gaily dressed people who are promenading to the sound of operatic music performed by an orchestra of sixty selected musicians, who are seated on a temple that is a miracle of painting and gilding. Descending the broad steps of the terrace, hardly observing the exquisite carvings of the stone ballustrade, he stands at last by the fountain underneath the embroidered scarlet silken gonfalons, suspended on poles, whose golden ornaments dazzle the eye. He walks to the beautiful stone steps of the landing, on the borders of the lake, and beckoning to one of the fancifully attired boatmen is soon the sole occupant, if he chooses, of a brightly-painted shell that is delicate enough to carry Venus and Cupid. Reclining on the silver cushions he floats on water that is as limpid as crystal and watches the brilliant panorama before him, or plays with the graceful swans, who are tame enough to bear his caresses while his senses are scattered with a luxurious repose by the soft strains of the music on the one side and by the murmurs of a lovely little cascade on the other. If he is a New Yorker, by birth, and returns after an absence of ten or twelve years, he will find it difficult to realize that this scene of Fairy-like enchantment was the odious quagmire, whose lots even his enthusiastic predictions of future value could not tempt even a Dutch grocer to buy. As he floats around, in one place, he will say with Tenyson—

"There lies a vale in Ida, lovelier
Than all the vallies of Ionian hills.
The swimming vapor floats athwart the glen,
Puts forth an arm and creeps from pine to pine,
And loiters slowly drawn. On either hand
The lawns and meadow-ledges midway down
Hang rich in flowers, and far below them roars
The long brook fallen through the cloven ravine."

If he wishes to enjoy a crowning excitement let him float upon the lake, until the moon lights up the scene, and he will return to his hotel and wonder if he has been spending an afternoon and evening in New York.—*N. Y. Cor. California Farmer.*

BOOKS, &c. RECEIVED.

OUR FARM OF TWO ACRES, by Miss Harriet Martineau. This little book which first appeared in the columns of "Once a Week," has just been published by Bunce & Huntington, of this city, price 20 cents, paper covers. A personal narrative of successful cultivation of small tracts of land in the vicinity of our large cities, is sure to find plenty of readers. More on this subject is always desirable.

THE PREPARATION AND MOUNTING OF MICROSCOPIC OBJECTS, by Thomas Davies, New York. Wm. Wood & Co., publishers, \$1.50. A book much wanted, and which describes with care the apparatus, objects and mode of mounting them, covering the whole subject. Those interested in such matters will find this work a valuable aid.

MEDICAL STUDENT'S VEST POCKET LEXICON, just published by Wm. Wood & Co. A great deal of valuable matter in a small compass.

SECOND ANNUAL REPORT of the proceedings of the West Jersey Fruit Growers' Association, 1864 and 1865, containing a report on all fruits grown in West Jersey, by Nathan Leeds of Cinnaminson, chairman of General Fruit Committee. An address by Hon. Wm. Parry, President of the association, and an interesting article on "atmospheric humidity as a protector from cold," by James S. Lippincott, Esq., of Haddonfield.

HOVEY & Co's CATALOGUE OF FLOWER SEEDS, with a supplement containing lists of novelties and select varieties.

Hovey & Co., 53 North Market Street, Boston.

RETAIL AND WHOLESALE PRICE LISTS of the River Bank Nurseries, Adrian, Michigan, Ramsdell, Loud & Co., proprietors, also No. 1 Descriptive Catalogue of Fruits, and Nos. 2 and 3 Descriptive Catalogue of Ornamental trees, Shrubs, Roses, Greenhouse, Bedding out Plants, Bulbs, &c.

THE HORTICULTURIST.

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CURIOSITIES OF HORTICULTURE.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

IT is one of the curious facts observable by practical horticulturists, that while a prodigious increase has been given to the production of every description of fruit, the price for whatever may be brought to market has been steadily advancing. Consumers have undoubtedly had some suspicion of the same remarkable fact. It would seem that the demand must be increasing faster than the supply, or these advancing prices could not be maintained. It would probably be difficult to account with precision for this state of things; but the fact is evident to all producers, that the more freely the great public is supplied with fruit the more it will consume.

There is reason why this should be the case with every luxury that comes before the public. Thirty years ago, the now daily summer indulgence in ice cream was almost unknown. It was manufactured as a rarity in only one or two aristocratic confectioneries in each of the great cities, where it was retailed in small wine glasses, at

twenty-five cents. One had to walk many blocks to reach the places where it was sold. It was rarely seen at even weddings, because of its absurd price; and for years continued to be a sort of sealed luxury, in which the masses could not indulge, because they were unable to obtain even a taste of it.

But time has long since bravely changed the case. As the secret of its manufacture became known, so the imported luxury was spread before the public at a thousand new depositories. Their taste became educated to understand and appreciate it. The consumption became enormous, though cheaper processes were invented for producing it, until now, at less than half the price it yields a better profit to the maker than before. There are great farms around Philadelphia, which formerly produced from one to three hundred pounds of butter weekly, which for years past have not sent a single ounce to market. All the milk they yielded has been converted into ice cream. Invention

came in to stimulate indulgence in the new luxury. Numberless machines were patented for producing it so readily and cheaply that in multitudes of private families the ice cream freezer has become as indispensable as the coffee mill.

This process of educating the public taste for superior fruits has also been going on for many years, producing, in some respects, equivalent results. The two most prominent ones are a vast production, and an increase of price. The steam engine has been applied to the manufacture of ice cream, and ingenious restaurateurs have adulterated the product by the infusion of cheap ingredients, by which the public appetite is so far satisfied as to keep up the consumption. But no engine can multiply or ripen the peach or pear crop, or add a single bushel to the product of an acre of strawberries: It is to nature alone that we are indebted for the flavor of all these exquisite fruits. Human skill and assiduity may increase the quantity, and to accomplish this is the peculiar province of horticulture. But demand evidently keeps pace with production. It must even exceed it, or prices would not so steadily rise. Twenty years ago strawberries could be purchased at eight cents a quart. Few persons produced them, perhaps no one cultivator had as much as an acre devoted to them. The masses never saw or tasted them. But in twenty years horticulture, all the world over, has made gigantic progress toward ranking among the exact sciences. Its devotees have discovered and introduced multitudes of new and valuable fruits, while other enthusiasts have originated new grapes, new raspberries, new strawberries. The two latter have been distinguished for their immense productiveness. This prime recommendation to the strawberry has placed it within reach of the masses, and they, ever ready to appreciate a valuable fruit when made acceptable to them, have so enlarged the demand that he who now can boast of only one acre, is considered as among the moderate class of cultivators. It is an extraordinary incident

of this condition of things that prices should continue to advance. But the fact is undeniable that strawberries now sell for three to four times as much as they did twenty years ago. It may be evidence of increasing wealth among our people, or only one phase of the national extravagance. But it holds out to the careful horticulturist the surest promise of abundant pecuniary reward.

Should these horticultural reminiscences be extended, the same general result will be recognized,—a rise in prices. Take the pear as another illustration. Until within a few years one never heard of them selling at a shilling to twenty-five cents each.—What is most remarkable of all is that these prices must be given by the masses, not exclusively by the wealthy, as this fruit thus labelled and exposed for sale at the street corners, is there purchased by the way-faring crowd. Grapes also, come in as sharers in this extraordinary harvest. A dollar a pound is the common price for unlimited quantities of the choicest varieties.

There is a corollary from these facts which may be of value to many. I omit all urgency touching the planting of new vineyards and orchards, and will refer only to the recuperation of such as have been many years established. There must be a mine of wealth in some of these of which their neglectful owners do not dream. I was last week upon a farm, situated in the best fruit-growing region in New Jersey, which, thirty years ago, had been used as a nursery. The nurseryman had long since retired from business, having made a comfortable fortune, and the farm had passed through a succession of owners, only one of whom appeared to have left behind him any evidence of horticultural taste. He had built an extensive cold grapery, and stocked it with the choicest foreign vines, whose products never fail to command the highest prices. But like all his predecessors, he in turn had sold and moved away, giving place to one who considered the raising of sweet corn and pickles the chief end

of man. The grapery, in his view, was an incumbrance, but as it would cost money to remove it, it was permitted to stand. The walls were falling to pieces, the sashes had here and there slipped down from their proper places, while hundreds of the lights were broken, and the interior was used as a chicken roost. But there stood the grapevines, bursting into bloom, and giving evidence, in the shape of numberless blossoms, that they were yet in full vigor. Happily the farm had again changed owners, this time falling into possession of a gentleman who mourned as deeply as myself over the neglect of this precious grapery, and who, aware of its capabilities, intends to turn to good account the labors of his predecessor. The vines were not only planted to his hands, but were in the prime of bearing, and he had thus a ten year's start in his grape crop.

But mementoes of the taste and foresight of the nurseryman who once owned the farm, were abundant in the fields. There were old apple trees in profusion, with nearly a hundred pear trees of superior varieties, vigorous of growth, but utterly neglected, and reported as yielding small crops of indifferent fruit. The out-going seller of the farm had intended to cut them down. He knew the market value of pickles, but the pear culture was a sealed book. The buyer, educated in a different school, believed that there was yet a high money value in these trees, and that they could be resuscitated. We stood among them and debated the question. He thought that here was a foundation to begin upon, and that an investment of money in reviving them would yield a far quicker return than in waiting for the product of a newly planted orchard. Among other facts and experiences, reference was made to the memorable account recorded in this journal, nearly twenty years ago, of the complete renovation of two outcast pear trees. Like all these, they had once borne excellent crops of fruit, but for several years had produced only worthless specimens. The owner was

told that the trees—for there were several in like condition—had exhausted the proper element in the soil, and that it must be reintroduced by artificial means. That autumn he carried out the suggestion, and scraped off all the rough outer bark from two trees, then coated them with soft soap, cut out about one-third of all the poorest branches, and shortened the head of the tree one third by cutting back the principal limbs, paring the wounds and covering them with the shellac solution.

This preparation being made, a trench was dug around each tree, three feet from the same, four feet wide and twenty inches deep, the soil being carted away. In making this trench, about a third of the roots were cut away. The trench was then filled with soil from a good pasture field, there being added at the time of filling, two bushels of refuse scoriæ from a blacksmith's forge, two of well broken charcoal, and two pounds of pulverised potash. All these were thoroughly intermingled after the trench had been filled, by frequent overturnings with the spade.

The result of this cheap and simple operation was manifest the following summer. The luxuriance and vigor of the foliage were surprising, for the newly formed roots were wandering into fresh and wholesome pasture. The next year there was a moderate bloom, but every blossom produced fruit. The third season there was a fine crop, the two trees producing six bushels of superb fruit. It was convincing evidence that the failure of old established pear trees to produce good crops is owing to a want of proper nutriment in the soil, and that instead of cutting them down when they cease to bear, they should be taken in hand and renovated. Such was the determination of the new owner of the farm referred to. He looked at these trees as money-making machines, capable, when renovated, of producing at least two hundred bushels annually, which, at current prices, would pay enormously for the cost of securing them. The example should have its weight with

the many who have apparently superannuated orchards. It is evidently not the trees that are exhausted, but the soil in which they are growing. The choice fruits have now so high a market value, that few

investments can be made to pay so well. If the planting of a new orchard be a work of skill or merit, that of renovating a barren one is infinitely more so.

FLOWERS IN MASSES.

BY EDWARD S. RAND, JR.

THE last few years have worked a great change in the mode of growing flowers. Formerly it was the individual plant or flower, which it was the aim and study of the gardener to produce, now the general effect is the great end to be attained, and to produce this result flowers are grown in masses. While thus much is lost in symmetry and individual beauty, much is gained by imposing and attractive combinations. There are many plants which individually are insignificant, which in masses show to great advantage. Nor is this the case with plants of humble growth alone, as might be supposed; many of our plants of stateliest habit look better in masses than as specimens, because the one covers and conceals the defects of the other, and a dozen plants may appear as one of fine proportions and great size.

We would by no means discourage the growing of plants as specimens;—we mean in the garden, for in the present article, we have no reference to green-house culture—it is only thus that the fullest beauty of the plant can be developed. A single plant grown where it can receive light and air, equally on every side, where every lateral bud has every opportunity to break into a branch, and each little axillary bud can freely send forth its shoot of foliage or bloom; where the terminal shoot receives unshaded its daily meed of sunshine, and its nightly bath of dew, will develop the true habit of the plant, whatever that may be. In many cases all the gardener's science can do nothing to assist nature; the

plant is well proportioned and elegant, but often the natural habit of the plant is bad, and upon such the skill of the gardener produces wonderful improvements. Some plants have a strong tendency to run at once to a head of bloom, to ripen the seed and die. A judicious pinching in of the young plant will give many heads of bloom, and convert what is naturally an awkward straggling plant into a neat and well proportioned specimen. Such plants are more pleasing to the eye of both the careful and careless observer.

While it may be a matter of interest to the botanist to know the natural habit of a plant, it is not for the gardener to allow plants to follow their nature if thus the most pleasing effects are not produced.

There are many plants which, grown as specimens, are of a stately and symmetrical habit, and singly are effective either in the garden or the landscape. These, unless a grand effect is to be produced on a large plantation, should not be grown in masses. Others again, as we have said, singly are insignificant, but in masses are effective.

It is a fact to be deplored that so large a proportion of those around us go through life with eyes shut to the beauty of nature. A little flower endowed with a delicacy which should point the most careless to the divine Creator, tinged with colors which no art of man can imitate, and framed with adaptations which no human power can create, is trodden under foot unnoticed and uncared for. It is only when masses of these simple flowers combine their beau-

ties, and display them with such effect that none but the blind can fail to notice them, that they attract the attention they merit.

In massing flowers however, much attention must be paid to the location of the display. A small garden would lose the grace and beauty which constitute its charm, if over-stocked with huge masses of flowers, while the flowers suitable for a garden would be lost if grown upon a lawn, or in avenue or woodland beds. We must study the size of the place to be adorned, and choose our plants accordingly, that all may conform to the general design, and that bizarre effects may be avoided. Yet it is impossible to make all conform to one standard; what to one will seem elegant, to another seems out of place, or insignificant. As the old copy book hath it, "many men of many minds," and each will plant his own domain according to his own ideas, though those who produce at home the most bizarre effects are often the first to find fault with others, and also those most likely to admire a place laid out and planted in accordance with the true principles of taste.

The object of our article is to call general attention to the effects which may be produced by growing plants in masses; to give a few general directions for their culture, and a selection of plants best adapted for this mode of growth.

In England, a peculiar kind of planting called "ribbon planting," has become very popular. It consists merely in planting low growing plants in narrow winding lines or belts, so that the various colored flowers or variegated leaves contrast prettily, often forming a belt with stripes of different colors. In this country it has not been attempted on a large scale, to our knowledge, and it is a question whether our hot summer sun would not, by drying up the plants, much impair the general effect. As a border for a narrow winding walk, such a design well carried out would produce a charming effect, which would be greatly

increased if the path rose up a gentle slope and was seen from a distance. It is the passion for this style of gardening that has caused so great a demand for plants of dwarf growth, and for those with variegated foliage.

It is evident that to produce the effect, the plants must be of one height. If the habit of the plant will not give us this, the care of the gardener must be called into requisition. For a simple illustration, what a pretty effect would be produced by a long line of the variegated *Alyssum*, with a line of the same width of *Scarlet Portulacca* edging a border of closely shaven grass.

The general rules for growing plants in masses are very simple. In the first place the habit of the plant must be considered, —we must not oppose nature; to make a tall plant from a dwarf, or to reverse the operation, though such things are successfully done, is by no means to be attempted on a large scale. In a green-house this may be done, but if we try the operation upon a mass of plants we must sacrifice either the grace of the plant, or our hopes of bloom. To illustrate, a bed of *Portulacca* is one of the finest ornaments for a lawn or level grass plat, but in a wood or shrubbery, it would be out of place, and be entirely uneffective. A group of *Indian Shot* (*Canna*) or *Castor Oil Bean* (*Ricinus*) would be in too marked contrast to a small grass plat; but the same in a large lawn would produce a stately and imposing effect.

Again, plenty of room should be afforded for the development of the plants. Nothing is ever gained by crowding, even if a better effect is produced for a few weeks in early spring. The result will be small foliage and sparse or under-sized bloom during the summer and autumn. (We speak now of plants bedded out).

The general tendency is to crowd the plants. When in the spring we set out a little cutting from a thumb pot, it hardly seems possible that the growth of a few months will give us a plant inconveniently

large for repotting, and so no room is allowed for growth. The distance to be left between plants must depend entirely upon their habit and size in perfection. The end to be attained is that the plants may present a mass of foliage, with no unsightly spaces, and no crowding. Some plants may be allowed to run into and over each other, of which we may mention *Verbenas*, *Heliotrope*, *Portulacca*, *Tropaeolum*, and as a general rule all plants of trailing and creeping habit. Others of tall, erect growth must be planted very close in order to produce a good effect, as *Gladiolus*, *Japan* and other lilies, *Tiger* flowers, and plants of kindred habit. Others again should be planted far apart, the exact distance being regulated by the size of the individual plants. These are generally plants of tall habit, with large spreading foliage, such as *Cannas*, *Ricinus*, and generally bedding plants of some shrubby nature. Others should be planted so the leaves will just touch the leaves of the next plants, thus covering the ground. This treatment is suitable for plants forming a dense crown of foliage which seldom rises more than a foot from the ground, the flowers being produced on tall stalks rising from the mass of leaves, such as *Yuccas*, *Tritomas*, *Pampas Grass*, (*Gyn-erium Argenteum*). But give as many rules as we may, so various are the plants used, and such the differences in growth, which different situations or exposures may produce, the great responsibility in each case must be left to the good sense and taste of the planter.

The soil for plants grown in masses should generally be rich, in order to produce large healthy foliage; it should be deep, that the plants may not suffer from drought, as nothing looks worse than small sickly foliage. *Tropaeolum* and some kindred plants do better in a poor shallow soil, for otherwise, they run all to foliage and produce no bloom. The shape of the beds should be round or oval, both for effect and for greater convenience in keeping the grass

edging in order. Our mode of preparing beds for massing, has been thus: After the autumn work of the garden is finished, the frost having killed the flowers, we select the site of the beds in the lawn or some suitable grass-plot, or woodland glade; carefully cut out the bed of the required size, which must be regulated by the habit of the plants we intend to use: a good size for a round bed, if to be viewed at a distance and to be filled with tall plants, is five feet in diameter; carefully remove the sod, leaving a clean edge on the bed; excavate the bed three to four feet deep, keeping the loam in one pile, the sods in another, and carrying away all stones, gravel or hard clay subsoil; if there is any sand excavated, retain a portion for future use in the compost for filling the bed. If the subsoil is clay, fill in six to ten inches of small stones to afford good drainage, for many perennial plants and all bulbs are very impatient of damp or standing water about the roots. A neglect of this precaution causes much disappointment in the culture of bulbs; if the subsoil is sand or gravel, no drainage is necessary. Prepare a compost of one part loam, one part peat, one part well rotted manure and one half part each of fine sand and leaf mould. Fill the bed in with this compost, well mixed together but not pulverized, raising the centre about six inches above the sides and sloping all round to the upper edge of the grass. If the bed is not to be planted until spring, pile in the compost loosely, somewhat higher than needed, and leave all for the frost to act upon it and to settle during the winter; in the spring fork all well over before planting. If the planting is to be done immediately, leave all a few days to settle, then fork over, rake and plant. A bed like this will last for years, only requiring a light top-dressing of fine manure in the autumn, which should be left on all winter and carefully forked in early in spring; we have often found it beneficial to spread a thick covering of leaves over the bed in autumn, over these put the manure and fork all over in spring. A bed for bulbs

prepared in this way will be a constant source of pleasure, and will give a succession of bloom from May to November,—the bulbs used should be Snowdrops, Persian Iris, Crocus, Narcissus, Jonquils, Hyacinths, Crown Imperials, Frittelaria Meleagris, Tulips, Liliun Excelsum, Liliun Aurantium, Martagon Lily, Liliun Chalcedonicum, Liliun Superbum and Canadense, Amaryllis Formosissimus, Gladiolus, Liliun Lancifolium, Punctatum, Roseum, Rubrum, Album (Japan Lilies), Autumnal Crocus and Colchicum Autumnale, white, purple, and variegated. All of these, except the Jacobean Lily, and the Gladiolus are hardy, and need not be disturbed from year to year, and with this selection, for six months in the year, we may have a succession of bloom; the plants are named in the order in which they bloom. The plants best adapted for masses are numerous; to even mention all would far exceed the limits of a single article. As a general rule any plant may be grown in a mass, due attention being paid to its habit and development. We propose, however, only to name a few which we have found eminently suitable for this mode of culture.

The Indian Shot (Canna). This plant is very conspicuous on a lawn, the leaves are large, showy and tropical, of all shades of green, and often with purple markings. It is a tall growing plant, some varieties attaining six feet in height, the flowers are showy even in the common variety, (C. Indica), and in some species very beautiful; that of Canna Nepalensis equals in size and color the Hedychium, all species need a very rich, deep soil and a warm exposure. It is better to plant roots than seeds, for the latter seldom give plants more than a foot high the first season. A fine bed of varieties, easily procured, may be thus made: Canna Gigantea in the centre, plants (if large), eighteen inches apart; next, a circle of C. Limbata, twelve inches apart; next, C. Nepalensis, twelve inches apart, or if large roots, eighteen inches; next, a double row of Canna Warczewiczii; close to the grass a broad line of variegated

Sweet Alyssum. We have then a dark-green centre with reddish orange flowers—next, light-green foliage with reddish flowers; next, glaucous green with very showy creamy yellow flowers; then, purple foliage with scarlet flowers, affording a striking contrast with the White Alyssum.

The Castor Oil Bean, (Ricinus) in its many varieties, giant and dwarf, with every shade of foliage from deepest purple red to whitish green is very effective. The seeds should be started in a hot bed, and planted in position after all danger of frost is past. The plants need a deep, moist, rich soil, and no exposure can be too hot if the ground can be kept moist.

Japan Lilies.—These planted in a large bed are very showy. Set the bulbs rather close, say about eight to twelve inches. Such a bed presents a striking effect by moonlight.

Gladiolus.—No plant is better adapted for massing. The beds should be small, say from three to four feet in diameter. Set the bulbs nine inch s apart; support each shoot with a slender willow stick, and tie as the flower stalk grows.

This is a beautiful bed to form in an open glade, in a wood, or at the end of a vista; the bright color of the flowers producing a dazzling effect.

The cheaper varieties only need be used, of which the best are

Brenchleyensis.—Vivid glowing scarlet, the best of all for this purpose.

Penelope.—Pink and flesh color, a very large flower and immense spike.

Hebe.—Pink and Cherry.

Couranti fulgens.—Red.

Madame de Vetry.—White, immense spike.

Endymion.—Pink.

Sulphureus.—Light Sulphur yellow.

Emma.—Deep red dwarf.

The Yucca makes a splendid mass, the foliage is always ornamental, and a mass of the tall aloë-like flowers is a most conspicuous object in a garden. All the species need a deep rich soil, and the plants should be seldom disturbed.

We have had one bed produce twenty spikes of bloom, one of which exceeded six feet in height, in our garden the past summer.

One of the great objects to be attained in massing is a succession of bloom and fresh bright foliage; therefore, with very few exceptions, perennials, (herbaceous plants) are not suited to this mode of culture, as they bloom only for a short season, and the foliage soon becomes ragged, faded and dirty.

The same objection applies to many annuals, such as bloom freely may be expected, for example, some of the Marygolds, which are very showy during the autumn months, and those plants with dark or variegated foliage, such as *Perilla Nankinensis* and *Amaranthus melancholicus*, which are always very desirable.

Many green-house plants are very effective in masses. The species used are as various as the fancies of the growers.

Of bedding plants, such as *Verbenas*, *Cupheas*, *Geraniums*, *Salvias*, *Heliotropes*, *Bouvardias*, *Ageratum*, *Alyssum*, &c., we have no need to write. All do well, but are seldom effective unless planted near a path. At a distance the effect is lost, except, perhaps, in the case of *Scarlet Verbenas* and *Geraniums*.

Dahlias, (except perhaps the Lilliput varieties, which, pegged down, do well,) are not suitable for massing; the habit of the plant is too tall. They show to the best advantage planted in a close line against a back-ground of evergreens.

There are many other plants which might be named. We have only mentioned a few which are most effective. In this as in many other things, each must make his own selection, and often many failures are necessary to teach one what to choose.—Experience is always the best teacher.

Glen Ridge, May, 1864.

GRAPE CUTTINGS FROM HISTORY.

BY JOHN S. REID.

THE native country of the Grapevine, commences about latitude 25° north, in Asia, running to 40° in the same atmosphere; but extending as far north in its cultivation, as latitude 50° in Europe, although between latitudes 30° and 40° appear to be its favorite climate. When we examine the nature of the grapevine, and its wonderful adaption to soil and climate, our cause of wonder is its wide-spread area, for it is found on the sterile mountains of Switzerland; on the banks of the Rhine, and the Carpathian mountains, as well as on the banks of the Mediterranean, and the far distant lands of Cabool and Hindostan.

But at present we intend to speak of the vine, as found in Asia Minor and the Holy Land. We mean to talk of the grapes of Eschol, and the vineyards of Engedi; of that land promised to the Jews, as being

a land flowing with milk and honey; where Judah should bind his foal to the vine, and his Ass' colt to the choice vine; whose garments should be washed in wine, and his clothes in the blood of grapes.

The earliest authentic account we have of this country is in Holy Writ; and of the grapevine in particular, is on the return of the spies from viewing the same, in their report to Moses, which reads thus:—"And they came unto the brook of Eschol, and cut down from thence a branch with one cluster of grapes, and they bore it between two upon a staff."

Now some of the Jewish Rabbis contend that this was an enormous bunch,—a bunch so large that it required eight men to carry it, and in some of their writings they have magnified the whole of the grapes of Eschol into bunches of enormous size, so

much so, that one grape was sufficient for wine for a small family,—a family of the Lilliputian order or species, we presume. Now some of our readers may inquire, where was Eschol, and what kind of soil was it that produced such prodigious grapes? Well, never having been there ourselves, we do not pretend to give an exact analysis of it, nor whether the soil of the brook Eschol was prepared according to rule, as *our* grape-borders are now prepared; but we would presume that it was pretty well gotten up, when it raised such extraordinary grapes. But as to the brook itself, we find it laid down in some of our maps, as one of the branches of the brook Serek, which rose not far from Bethzar, between Jerusalem and Eylon, and that its waters emptied into the Mediterranean, near Ascalon, in the land of the Philistines, in latitude 32°. Opposite Eschol on the Dead Sea, south of east is Enyedi, a little below the brook Kedron, mentioned so often in the Sacred Text.

Again, if one will take a map of Asia-Minor, and run his eye down to the south-east cape of the great sea, he will find the latitude of Gaza to be about 31°; and then by following the eastern shore of this mighty sea, up to its northern banks, he will discover the extent of territory claimed by the ancient Jews, as the western boundaries of the Holy Land, all of which was the land of the Olive, the Pomegranate and the Vine; for here were the vineyards of Libnah, Jazer, Abel and Sorek, mentioned by the sacred writers; whilst profane authors name Gaza, Sorepta, Libanus, Tyre, Ascalon and Sarou as vineyards of known value, the bunches of many of the kinds of grapes cultivated there weighing not less than 20 pounds each.

On the Eastern borders of Judea was the land of Moab, the Wilderness, the Dead Sea and Edom. Hence the beautiful apostrophe of the Bible: "Who is this that cometh from Edom, with dyed garments from Bozrah, &c."

The season of the vintage generally com-

menced in the month of September, continued through October, and closed in November, amidst general rejoicings.—Travelers write of the mode and manner of cultivating the grape, which seem to be in the simplest way. Some of the vineyards are trellised with posts and slabs; others are without any supports at all, and the vines are allowed to ramble on the ground, while on the terraced hill sides, the vines hang pendant on the terraces ripening in the sun—the very children of nature.

In a few of the vineyards near Enyedi, small posts were set in the ground for the vines, whilst in those around Samaria, they were tied together something in the form of a small bower, with their tops forming the coronal, the grapes hanging inside.

It is somewhat difficult to say exactly, what were the qualities of the grapes of the ancient Jews, when their land was one among the nations of the earth, nor what was the true quality of the wine as compared with any of the wines known to us.

At the fairs of Tyre and Sidon, wines were sold as articles of commerce. Some were reputed as most excellent in their characteristics, such as the wine of Helbon, of Biblos, of Libanus, and Tarepta.

Odoriferous wines were also not unknown to them, for it was customary to mix with the *must*, sweet scented herbs, drugs and myrrh, to flavor the wine, and give it strength, and make it capable of abating pain. Nectar was also a wine of the same quality as the Odoriferous wines, and used only by the Princes of the land. Hence the idea among the Greeks, that this wine was the drink of the Gods.

Eviran, the capital of Armenia, abounds in vineyards and gardens, and here the people of the country believe that Noah planted the first vineyard. The small grape Kischmish is raised here without seeds, and from a small red grape most excellent wine is made.

Mr. Layard, the English traveler says, that in examining the ruins of Nimroud, he

found many articles of much interest, among which was a metal wine strainer of elegant shape. He also frequently saw as he descended the Tigris, between Mosul and Bagdad, vineyards and Olive yards, where the vines were trellised in front and around the houses; and most luscious grapes were brought to him and his party by the Arabs.

Generally speaking, the wines of Palestine were heavy, sweet wines, in which water had to be mixed to prevent intoxication. The Scybellites, the Tibenum, the Arsynium, and the Abates are all wines of ancient celebrity; some of which were termed light or dry wines, not unlike our Catawba and Rhine Wine.

The wild vine, or one somewhat like our *Labrusca*, grows in profusion along the highways and among the hedges of Palestine, but its size does not average our common Fox, and the berries are small and acid. The yellow Syrian is supposed to be the ancient grape of Eschol, its bunches now ranging from 10 to 20 pounds, and very productive. There is another one of excellent quality, of an oval shape, and transparent, and a red grape, of size and shape not unlike our *Diana*; whilst travellers speak of a large black grape of superior quality for dessert, making a rich sweet wine.

So much for the grapes and wines of the Holy Land.

HOME CUTTINGS.

This month (April) opened cold and stormy, with high winds and heavy rains, so that our vineyards are fairly two weeks behind the usual seasons, and the buds, that should have been fully opened and showing fruit blossoms, remain semi-shut, although otherwise sound and healthy.

The Delawares and Clintons appear to have stood the winter better than any other; then comes next, the Concord, Diana, Lincoln, Union Village and Rebecca. These were left out all winter, unprotected, but the Iona and Israella were covered with earth, so was the Page and Allen's Hybrid, all of which when uncovered first of April, looked well. In speaking of the PAGE, all I know is from report, and this was given before. Its leaf seems like to the Herbemont, and its stem strong, but tender. I have about half a dozen of the vines, although only one is old enough to speak from. I have not seen its fruit.—Having several seedlings which show signs of fruit, I hope to inform you in the fall, of at least one of superior merit, a rival for the Iona, or Adirondac, or any other new variety.—Ain't this presumption.

NOTES UPON NEW AND RARE GREEN-HOUSE FERNS.—No. 1.

BY DANIEL BARKER.

GENUS POLYPODIUM.—SELECTIONS OF THE MOST RARE AND BEAUTIFUL.

DETTOIDEUM.—A very remarkable and handsome variety of 'Vulgare'; fronds erect, from 1 to 2 feet high, and from 4 to 6 inches wide.

CRISTATUM.—Well grown specimens of this are exceedingly handsome. Many of the perfect fronds resembling the beautiful *Lastrea Filixmas Van Cristata*; fronds from 12 to 15 inches high, and about 3 inches wide. Each division or pinnæ ending in

a three-forked parsley-like tuft, with a much larger one at the top of each frond; a beautiful variety for the fern case.

MARJINATUM.—A very singular and rare variety; fronds not more than 9 inches high by 2 wide. In one plant I noticed each lobe was distinctly eaved, as the variety 'Auratum.'

VULGARE OMNILACERUM.—This exceedingly beautiful variety, I noticed in some

two or three private establishments, and but at one of the great floral exhibitions. It is one of the most distinct and handsome of the many beautiful varieties of this fine genus, and ought to be in every collection of greenhouse ferns. Fronds from 1 to 1½ feet by 6 inches wide grow well in the fern case.

VULGARE CAMBRICUM.—Although this is not a new variety, it is a most lovely fern. Fronds from 1 to 1½ feet and 6 inches wide and *always barren*. This I presume is obtainable in many of the collections in this country, and from its peculiarly handsome appearance, should be in every collection of greenhouse ferns. It will flourish in the fern case, where it is a beautiful object.

VULGARE FLEXILE.—Extremely handsome. The fronds which are almost prostrate, are about 9 inches long and 2 wide; lance-shaped and divided. The pinnae inclining *downward*; the pinnules *distinctly toothed*.

VULGARE BIFIDO LOBATUM.—A new and very distinct form of 'Bifidum.' A beautiful small evergreen variety, well adapted for cultivation in the fern case.

VULGARE SERRATO TRUNCATUM.—A very remarkable and singular variety; fronds about 1 foot high to 3 inches wide. The pinnae distinctly toothed, and has the singular appearance of having been bitten off. All the plants which have come under my notice are apparently constant.

ALPESTRE.—Comparatively a rare species. It is a most delicate and lovely fern. The fronds are lanceolate in shape, and from 1 to 2 feet in length. Color, a beautiful deep green. The habit is upright and very graceful.

VULGARE SOMILACERUM.—A most beautiful fern when well established, and very *constant* under cultivation. Fronds from 1 to 1½ feet in height, and about 6 inches wide. The fructification in this variety is remarkably prominent.

AURITO DENTATUM.—A rare and beautiful variety. The only specimen which I saw of this was found growing wild near

the celebrated Lake Windermere, county Westmoreland, England. The lobes are very aurite or eaved, (as in the variety *Auratum*), next the main rib, a small variety, the frond being normal in outline.

VULGARE BIFIDUM.—The lobes of this variety are seldom all alike, and I think quite liable to vary under any circumstances. When a good form is obtained it is very fine and beautiful.

COMPOSITUM.—A truly composite variety which is very difficult to describe. It combines the variations, more or less, of *Bifidum Serratum*, *Auratum* and *Endivifolium*, a particularly beautiful and interesting variety. Should be in every collection of greenhouse ferns.

INTERRUPTUM.—A very curious and singular variety, with the general appearance of *Flexile*. The lobes are all irregular or interrupted, many of them being absent altogether. All the fronds which have come under my notice of this most curious sport, were barren of sori.

MULTIFIDO CRISTATUM.—The fronds of this splendid variety consists of little more than a long stalk, and about two inches of a most beautiful crested margin or tufts, which form an exceedingly handsome crest, one of the most interesting and splendid varieties in cultivation.

I made notes of no less than 30 varieties of *Polypodium*, at the various exhibitions in Europe, during the last summer, many of which are exceedingly interesting and beautiful. Many may not be constant in cultivation. Those named above, I believe are so, (with the exception of *V. Bifidum*) and can be depended upon as such; that a few years will bring many, even more beautiful than those which I have very feebly described, to light, there can be no doubt, comparing the normal form of "*Polypodium Vulgare*," with such beautiful varieties as *Cambricum*, *Somilacerum*, *Omnilacerum*, *Endivifolium* and others, there seems to be no limits to the forms which may yet appear.

There is a wide field open to the lover of

this fine genus, and there is no reason why the collection of Ferns, (in this country) should not be as rich in *native* varieties, as those in Europe. The time *will come* when they will be.

HINTS AND QUERIES.

BY T——, ELGIN, ILL.

ENGLISH Gooseberries,—must they be discarded? I dug up mine years ago, all but one bush which I fondly spared for its “handsome doings” in early days. This I nursed with care; but notwithstanding all my pains-taking, year by year the mildew would take the berries as regularly and surely as the “little Turk” my plums, till last season, that dryest of seasons, when, wonderful to tell, it gave me a fair show of healthy fruit again. What did it? Was it the shade of a small Austrian pine which began to loom up on the south side, or the dryness, or something else?

A neighbor has a neglected row of bushes of the same kind growing in stiff clay in a low shaded spot, which has never failed to give him fair fruit during all these years. Well, perhaps “its no consequence.” The Houghton, though smaller, is always good, fine flavored, easily managed and productive.

The Weeping Willow, (*Salix Babylonica*) my old favorite “ornamental,” will not be coaxed here into enduring thrift. I have been trying divers methods in different localities, and waiting almost a generation without success; getting it up some fifteen feet or more, with a fair sweep of drooping spray, and then, by some untoward winter seeing it reduced in the spring to incipient conditions. But two have attained a respectable size in our place,—having doubtless found a somewhat congenial habitat—one high on a terrace near the wall, the other, low, having cellar drainage. Will the new ones, American and Kilmarnock do better?

We can make many things grow on the wrong side of Isothermal lines when we

learn how. We must know the wants of the nurslings, how much sun, how much shade, what kind of soil, how much wet, and how much dry. For instance, the Catalpa will not be reconciled to the conditions of my grounds. After trying it several years I had to dig it up, but the roots being good, I was loath to throw them away; and remembering how I had seen them flourish on the banks of the Dan and Stanton, and on the Delaware, I planted them on the dry, sandy and gravelly banks of our little river, in a bleak exposure, where they have continued to grow and bloom quite well.

Was it the Winter or the Beetles? My grapevines were infested in the Spring of 1863, with the little steel-blue Beetle, (*Halticacalybea*) the only time I have ever noticed them in my garden. In June following, their larvæ were discoverable on the leaves. Where they were most numerous there was but little fruit, and little new sound wood.

The Winter of 1864 was destructive to all exposed wood, but mine was covered with leaves and litter. In the Spring following, many of the canes were injured, some dead. Some Delawares and Dianas lost an arm as well as spurs, marring badly my careful pruning and training.

The Birds and the Fruits.—Well, lackaday—there does seem some bitter with the sweet, a prick in every pleasure. The Birds—I am delighted with their music, their plumage, and their motions; but to feed them from Strawberry time till Grape gathering is quite another thing. O but, say the knowing Solons, they save the

fruit from hurtful insects. Yes, they do take the insects, *and* they take the fruit too. "Well, it is only a small per centage they take for protection." Small? I happen to think otherwise. I am of opinion they care little for insects while the fruit lasts. Why, what portion do you suppose it takes of my Tom Thumb and Champion peas to rear a hatching or two of Orioles? And how many rows of all my small fruits will it require, think you, to feed the families of half a dozen pairs of Robins, ditto, Cat Birds, ditto, Brown Thrashers, and a colony of Cedar Birds? And then, there are the peckings and suckings and pluckings among the larger fruits, the fair sunny-side show specimens, the products of nice culture just mellowing into ripeness—all spoiled at last. The pretty provoking harpies, the thieving gourmand pests! The insects forsooth and compensation! Why, these gay allies live on berry-deserts.—What if they do now and then snap up a stray beetle, or some luckless moth, and gobble their larvæ; they return with eager

haste and appetizing fondness to their favorite fruit repast, morning, noon and night. And must all my outlay, toil and waiting come to nothing? Or must I do picket duty, and pace my garden like a sentinel to keep off the marauders? No, I'll fire; yes, I'll shoot!—So I feel sometimes.—But then, in the Spring-time I shall welcome them again; their trills and carols will touch responsive chords, and I shall let them build and rear their younglings; in the Summer and early Autumn I shall be sore vexed with their misbehavior.—But I shall dismiss them in frosty time with something of the philosophy and feeling of "Uncle Toby."

I must thank H. W. S., for giving us in the January number, his successful method of growing "Broad Leaved Evergreens." This is nature's own way. I have tried other treatment and failed. I shall try again, and I shall succeed. I wish he had told us where to find the three new mahonias.

FLOWERS AND THEIR CULTIVATION.

BY O. H. PECK, MELROSE, MASS.

MESSRS. EDITORS:

Gentlemen,—Please allow an humble individual, a short space in your valuable and interesting magazine, to be devoted to the pride of his heart, the bent of his will, and the insatiable appetite of his mind, viz: "Flowers and their Cultivation."

Hard-hearted, callous-minded, inexcusable, old, and sometimes young chaps can see nothing to admire with interest, in the beauties which nature has prepared for soothing the sorrow, comforting the afflictions, and making glad the hearts of the denizens of this world. To all such allow me to say in the language of one who left his earthly tabernacle, to bloom in the gardens of Paradise, nearly one hundred years ago.

"Go poor devil, get thee gone; why should I hurt thee. This world surely is wide enough to hold both thee and me."

But to those dear old friends, whose joy of the beautiful never ceases to flow on in its pellucid stream, who love to feed on flowers and spend their little crowded hour of life in that most noble and glorious pursuit, the cultivation of flowers. I do entreat thee lay aside all prejudice, and "pride that licks the dust," and come with me to

"Gather rosebuds while ye may,
Old time is still a flying;
And this same flower that blooms to-day,
To-morrow will be dying.

God beautified the earth with flowers, intuitively we love them, argumentatively we cultivate them. How lively and charm-

ing is the sight, when delicate buds of gayest colors are put forth, when little petals expand to the sweet notes of innumerable birds, whose melody is softened by the gentle motion of the air. The arising sun warms the awakening day, drinks the holy dew which fell from heaven, adds new lustre to the festive blossoms, and sends a ray of divine light, deep into the recesses of the heart of the ardent lover of God's annual gem, colored and perfumed in the bowers of Paradise.

What delicious fragrance floats on the air! We are filled with such pleasing sensations that we feel transported to the Oriental Gardens of the East, where groves of oranges and citron send out their ravishing perfumes; where roses entwined with woodbines appear in beautiful contention; where noble vines adorn the naked branches of stately elms; blushing and transparent fruits peep from between the foliage; where acres of roses fill the air with luxury, and odors of cloves, sandal wood, cedar and frankincense soporates the beholder with delight.

The fragrance and somnolent power of the odor from the flowers of the Orient are to us unknown. It is related of a Persian poet who was rich in genius, but who wrote little, that on being asked why he did not produce more, replied, "I intended as soon as I should reach the rose tree, to fill my lap and bring presents for my companions, but when I arrived there, the fragrance of the roses so intoxicated me that the skirt of my robe slipped from my hands."

It may be true that the flowers of the Oriental world surpass in richness of color, and in overpowering fragrance those of our colder clime, still I cannot believe they are adored or appreciated more. Among Americans, there seems to be a growing love, and an increasing admiration for flowers. We hope and trust that this love will meet with no obstacle to retard its progress, but on the contrary, may it continue to expand until the love of all hearts shall be

drawn within its fascinating folds, and may the time be near at hand, when the flower garden shall become an institution, and a part of the household of every householder, never to be dispensed with.

A stranger on visiting the vicinity of the city of Boston, is greatly surprised at the large number of chaste and beautiful homes which meet his view on every hand. These suburban residences are built with much fine taste and skill, and the grounds laid out in ornamental and useful designs. We often see a beautiful sheet of water with a fountain in the centre, throwing up its sparkling stream of crystal gems; beside the gravelled walks, in beds of richest earth, are flowers in every color, shape and style. The pretty little annuals whose lives are cut off by the first sharp breath of the wintry king; the perennials whose autumn death is but the prelude to another life; these with the hardy shrubs and bedding plants, give a succession of flowers throughout the season. Gambolling around the home, are the little children, pets of the household, enjoying the life giving atmosphere, which sends the warm blood to their dimpled cheeks. The gray pony, with his low seated wagon is drawn up before the door, ready to carry the happy family to their twilight ride. Dog carlo wags his tail in consequential assent to all the proceedings.

Such are some of the comforts which you find in New England Homes. Let each and every one of us do all in our power to advance and promote this living and enjoying living. In what better way can we proceed, than inculcating in the minds of the young, the beauty and loveliness of flowers; loving gifts of a beneficent Creator. Teach them to plant the seeds, to watch and protect the flowers, to make it a part of their daily routine of life. Happiness and innocence will be the blessed result.

"All who joy would win—
Must share it—
Happiness was born a twin."

NOTES OF FOREIGN TRAVEL.—No. 1.

IN an ornamental point of view the environs of London present several general characteristics, while the Horticulture within and around the metropolis is usually, and perhaps justly regarded as embodying all that is known of excellence throughout the country, and as affording a fair criterion by which its progress may be judged.

The valley of the Thames, from London up to Hampton Court, is rich in all the beauties which water-side villas and villages commonly impart. The neighborhood of Fulham and Kew, Twickenham and Richmond may be specially singled out as affording pleasant banks, with green lawns of perfect verdure, noble trees, and beautiful and commanding sites for the most commodious and comfortable country seats to be found in all lands. The celebrated villa of Pope, at Twickenham, has been converted into an extraordinary modern residence, in a mixed Chinese style, and has thus lost its original identity, and its peculiar associations. Strawberry Hill, the seat of Horace Walpole, still remains, without essential alteration. The whole of this country, on both sides of the river, furnishes admirable sites for gentlemen's seats, presenting broad masses of trees, and blades of grass, with sufficient variation and elevation of surface to render the views commanding, while the mingling of park, and village, of trees and hedges, of castle and villa, and horticultural structures, present a picture of wonderful interest and beauty.

Among the noble trees which are always preserved with such care and cost by the English, there are many Cedars of Lebanon, of great age and size, and which constitute a peculiar feature in the landscape of these suburbs. They are unusually numerous on the west and south-west sides of the city. As the adjuncts of stately mansions or elegant villas, along the valley of the Thames, they are remarkably picturesque and effec-

tive, and the traveler can scarcely pass a hundred yards along portions of the western roads, without coming upon fresh specimens and groups of them. It is scarcely necessary to add that they communicate a very marked and aristocratic character to the district. And they are as beautiful in their early growth, as they are venerable and majestic when old. They are here met with in avenues, and standing opposite each other, near the house, or on a lawn, or as single trees, or part of a group of mixed species. But very rarely, I noticed, are they found grouped together in mass of three, four or more, on lawns, or in parks. Those at Holland House are a notable exception; but they are unfortunately now so shattered as to have lost their distinguishing beauty. No tree, perhaps, if we may judge from the imperfect examples we have seen, and from the more satisfactory descriptions of those still existing on Lebanon, is better adapted to unite into a splendid group for a lawn, or for the slope of a park, or especially for a swell or knoll in either a park or garden, where they would be sufficiently sheltered. As trees for detached grouping, with their own species alone, both this and the Deodar have, I think, yet to develope a new and most uncommon character in the English landscape.

Lombardy Poplars, with their stiff, ungraceful forms, are very freely introduced into the scenery around London. This tree seems to harmonize somewhat with the pointed style of architecture, and one or two, I have often thought, might be planted in the church yard, with good effect,—its upward pointing and aspiring growth would seem to be in keeping with the Gothic structure against which it is relieved.

There are some celebrated Beeches at Burnham, and Windsor Park contains some superb specimens of this noble tree. In

the neighborhood of Sevenoaks, Kent, also, the Beeches at Knowle Park are of the finest order, while those in the Marquis of Camden's park, adjoining, are superlatively beautiful, being planted on the slope of a hill, and spreading down their branches on the grass, in the most graceful and natural fringe imaginable. On the top of a hill not far from this, but nearer London, are the famous Knockholt Beeches, which, standing alone in a considerable group, make a conspicuous landmark which can be seen for thirty miles around.

In Kensington Gardens, Greenwich Park, and other places, are to be found some very fine specimens of Spanish Chestnuts. It is a first rate park tree, especially for low sheltered situations. In Bushy Park there is an avenue of Horse Chestnuts of extraordinary beauty and attraction.

Weeping Willows, especially in the Surrey suburbs, are frequently found in the

smaller villa gardens, though more commonly reserved for the margins of water in larger places, or for overshadowing tombs in cemeteries.

Visitors in the neighborhood of the Metropolis, in autumn, will be much pleased with the appearance of the Virginia Creeper, which abounds on houses, cottages, walls and gateways. The mixture of red and yellow, and a purplish tint in its foliage at that season, imparts great richness to its appearance. It is a favorite vine wherever known in England.

It is not my purpose to catalogue or describe the trees about London; but no mention of English scenery would be complete which left out the Old Oak, of which the English are so decidedly and justly proud. In the notes of the Parks in and about London, which I propose to send you, the Oak will not be lost sight of or forgotten.

THE STABILITY OF THE TYPES OF VEGETATION.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

EVERY atom of matter has within itself the laws of attraction and repulsion which is coexistent with it.

We cannot conceive of it in any form independent of those laws. All matter is susceptible of assuming either state, or both, owing to its electrical conditions, positive or negative.

Likewise, all matter is capable of assuming three forms: solid, fluid, and gaseous. The solid is the attractive form, the gaseous the repulsive, and the fluid the intermediate. In the solid state every particle is held together by the law of attraction, and in the gaseous they are separated by the law of repulsion. As all matter is in one of these conditions, it must attract or repel other matter in proportion to the affinity existing between them. Consequently, we have the law of motion as an essential property of matter which always exists

with it; which may be increased or diminished in proportion to its relation to other matter.

In composition and organization we see its adhesive and positive effects, and in decomposition and disorganization we see its repulsive and negative effects, and in its intermediate state it is held in equilibrium by the opposing forces, and in that state matter can only be said to be relatively at rest.

By the laws of attraction and repulsion, particles or atoms unite by a definite law of proportion, as each ultimate element has a *fixed form* by which it retains its properties and identity: any *change* in the *arrangement* of those atoms will produce a different result. Therefore we have many varieties and form of matter yet of the same composition.

It is by this law of affinity that objects

preserve their existence distinct by attracting only those materials in certain proportion most congenial to their nature. By this law every organization is built up and retains its peculiar character, though every part is supplied by the same general fountain, yet each part, by this law of affinity attracts only such substances in definite proportion that compose the different parts of the organism, as the wood, bark, leaves, flower and fruit.

It is by this law that we are enabled to classify into genera, species and variety; each class preserving its peculiarities inherent in its constitution, assimilating and depositing to every part of the plant what is best adapted to its nature.

In each of these classes there are peculiar tendencies, each has its own character and form of growth, by which it is capable of sustaining other varieties of the same species when engrafted upon its own stock. By this law of affinity each variety must retain its identity distinct from all others, upon the same principle that the different parts of the organism does, as the leaves, flowers and fruit, &c.

Although the different parts of the plant be supplied by the same general circulation, and composed of the like elements, yet by these laws of attraction and repulsion, composition and decomposition, organization and disorganization takes place, until each part has rejected or received its just proportion in its own peculiar form and manner to retain its identity. If there was not a law of this character, all nature would become a mass of confusion, its identity would be destroyed, what would be recognized to be a fact at one time would be different at another; so all distinction would be lost, and we would be placed in a labyrinth of uncertainty, where all knowledge based upon observation would cease.

But by these unerring laws, all vegetation retains its peculiarities and properties, and preserves its least shade of difference throughout numerous ages unless crossed by some different variety.

To illustrate this subject more fully, suppose we take a certain plant, (say Delaware Grape,) this will retain and preserve its peculiar character throughout all ages, in every climate; (though modified by cultivation and surrounding circumstances to some extent) when returned to its native home it will have the same character, not even having changed in the least by ages in a foreign land. Neither climate, grafting on other stocks, or manner of growing can change it. We cannot even do it by crossing or hybridizing, but simply produce a new variety, partaking perhaps of the character of both.

The reason of this is, the production of new varieties depend upon the germ principle, which may have its inherent atoms differently arranged by the pollen of its own flower, or that of some other variety. Consequently scientific experiments upon this subject, will demonstrate that by careful examination of the character, constitution and habits of plants, and their hybridization, for the purpose of remedying their natural defects, will produce a healthy and improved order of vegetation with any peculiar characteristics desired, as have been done in the animal race.

Constitutional defects can only be remedied or counteracted by the strongest possible efforts, and by hybridizing with those of very marked opposite tendencies, which must predominate to give a positive effect to their products. As long as this state is continued and this law observed there will be an improvement; but on the contrary, should it be neglected the negative state will take the ascendancy, which will soon lead to degeneracy and go back to the original and unimproved type.

The reason of this is, the positive state has always a surplus to spare, and has therefore the flower to give or impart, and will make the negative conform to it, minus the amount of the negative state. Consequently the more marked the positive state is the greater will be its effects, and the more striking its peculiarities.

For this reason seedlings cannot be depended upon to produce exactly the same sorts as defective pollen, or a very marked positive state of it, or the pollen from other flowers would produce a different effect. And for like reason different varieties engrafted upon other stocks cannot lose their peculiarities if so engrafted for generations.

It is supposed by some, that the climate and the stock have some influence upon the grafts, and through the course of time they would be acclimated or changed in their character. It is true that they have a modifying influence, but do not change their peculiar characteristics. It is simply as it were a bending, contracting or expanding effect, which may take place in almost any location, by their adaptation and manner of cultivation; yet the types of vegetation remain distinct, even petrification does not change them, for we can there read the records of by-gone ages with unerring certainty.

For instance, to illustrate this subject more fully, every variety has its peculiarity of growth; some are very vigorous and erect, others the opposite, and the formation and growth of their roots are in a corresponding manner.

If we graft those of very opposite tendency on each other, the result will be a modifying influence produced on their habits of growth, in proportion to the vigor and predominating tendency of either, as

the Apple on the Paradise, or the Pear on the Quince.

Likewise of the influence of climate and location, if grown on the open prairie, they would be exposed to continual agitation, and subject to hard and prevailing winds, and scorching sun, which would make them conform to a low branchy, stocky form, and well rooted habit to endeavor to retain their existence under such unfavorable circumstances; while on the contrary, were they grown in a heavy timbered and calm country, it would be the reverse. So of all other conditions in like proportion. The same may be said also in respect to their bloom and fruit.

The climate, propagation, cultivation and attention, may produce them to the greatest perfection, or the reverse. Yet in all these instances, when returned to their native homes and habits they still possess their original peculiarities.

Neither time, climate, propagation or cultivation, or any thing can change the types of vegetation; they carry their identity throughout all ages, at last to give place to a new order, perhaps more congenial to the altered clime.

Yet by the research, industry and perseverance of man, we can produce new varieties better adapted to our various wants, and more congenial to our numerous locations and diversified climate.

BUCKTHORN VS. HONEY LOCUST.

MESSRS. EDITORS:—I am grateful to Mr. D. D. Buchanan, of Reid's Nurseries, for giving me an opportunity to say, that the paper on "Trees and Shrubs of beauty," was sent to the *HORTICULTURIST* without my consent or knowledge. It was written for a local Society, and was not intended for the public. Placed in contrast with the facts presented by Mr. Buchanan, it shows how much care horticultural writers ought

to use, when they undertake to direct the rural embellishments of a country so large as ours.

To one living in Central New York, where the mercury has a trick of dropping down to 20° below zero, Mr. Buchanan's statement that "the *Pyrus Japonica* is the finest deciduous plant for ornamental hedges," reads like a bit of pleasant irony.

Such a hedge would not survive an ordi-

nary winter in central New York, unless protected by deep snow. Nor does the Osage Orange fare any better, and our Privet hedges are often deformed by dead patches.

Not to question Mr. Buchanan's right to speak for the latitude of Elizabeth, N. J., I must still insist that, in Central New York, "for a hedge to turn cattle, we have nothing better than the Buckthorn, and need nothing better." John Jay Smith describes the Buckthorn as "a strong, quick growing plant, that makes a good close hedge; is very hardy, and when properly cut looks extremely well. Its bark and leaf are offensive to insects; and the borer, which has ruined nearly all the thorn hedges in this country, will not touch it. It will grow in the shade, and in most every soil." In Massachusetts, the Buckthorn is considered the most suitable plant for hedges. There, as in Central New York, it vegetates early in spring, and retains its verdure late in autumn. Being a native plant, it is never injured by intense cold; is never girdled by mice; never sends up suckers, and having small, fibrous roots; it is contented with its humble condition in the hedge row.

If your correspondent is anxious to defend the Honey Locust against all attacks upon it, I would call his attention to the 98th page of the first volume of the *HORTICULTURIST*, where the late A. J. Downing says: "We cannot recommend the three-thorned Acacia, where a really good and permanent hedge is desired. It grows very rapidly, and its foliage is very ornamental; but its habit is so coarse, and its growth so rampant, that it is almost impossible to keep it in due bounds, and form it into a really compact hedge. If only a loose and picturesque barrier is desired, then it will do perfectly well. But if one desires a compact and durable hedge, he had better employ the Buckthorn, or some of our native thorns. Our friend, the late Judge Buel, was quite partial to this plant, and strongly recommended it for hedges. By his persuasions mainly, we planted about 600 feet in excellent soil. The hedge is a flourishing one, but neither trimming, shearing, nor plashing have succeeded in making a close and satisfactory hedge."

Yours very truly,

E. N.

OUR METHOD.—No. IV.

BY PRATIQUER.

ONE of the reprehensible fallacies of grape philosophy is, that the vine is capable of bearing great hardships, and proceeding from this postulate, instructions are apparently given in imitation of the experiments on the capabilities of the horse to live without food, to test the exact amount of ill usage it can endure.

But *cui bono!* Why experiment on its vitality? Why treat it with severity? Will a poor plant thus become a good one? Will a good one be any better for it? Will nipping in the bud develop vigor? Will frequent pinching increase its natural force? Will summer pruning enable it to ripen its fruit earlier and better? Is cutting and

slashing to be the ferule and birch rod to expunge its original sin, and bring it back to the standard of excellence? Can the weakness thus engendered be cured, and vigor restored, with stimulating manures as its "plantation bitters?" We answer emphatically, no! Our method begins with a healthy plant, and applies the "Soothing syrup" of good treatment to produce fundamental vigor. The Indian who plunges his new-born infant through the ice into the cold water of the lake or river, gives as a reason for it, that if it cannot bear hardships, it is not fit to live. Such is not the reasoning of civilization, and we never try it on our children or on young grape

vines. It is a good rule to do nothing to a vine without a motive, and to consider well beforehand if that motive is a useful one, and attainable without injury. Hence, when our vine is young and struggling for existence, we "lay it down softly and care for it tenderly," preferring to encourage instead of checking its progress, while its energies are required to establish a strong constitution. For this reason we only restrict it to one cane, and allow it to grow freely during its first two summers. In this we are at loggerheads with our brethren of the old school, who seem most anxious to bring forth precocious fruit-bearers, at the expense of the health and life of the vine.

"I can," says one of the theorists, "make my grapevine bear more fruit when it is two years and six months old, *than it will ever produce* in any year afterwards." He should diligently follow up this treatment, by planting new vines, as he does strawberries every year, for by no other means can he secure a succession of crops.

Our method, looking to a communication with posterity through a grapevine telegraph, that our memory may be cherished, proposes to have the old vine "a sure thing in 1870," (S. T. 1860. X.) and long afterwards; therefore we neither pinch it unreasonably, prune it immoderately, or crop it excessively.

The European practice, adopted by our K. G. C's, (knowing grape cultivators) *said* to be founded on Scripture authority, (see Canticles 2, 15) of pulling off the "little foxes (laterals) that spoil the vines," while it mystifies a beautiful poem, too beautiful for criticism, evinces in its practice but little of the "wisdom of Solomon." Their "vines have tender grapes." Our's are said to be not tender enough, *ergo* they should have different treatment. What we most need is an American system of Grape Culture, including a total reform in summer pruning, confined to removing the secondary shoots from the double bud early in June, and a judicious pinching with the

thumb nail *only* at the extreme ends of the laterals, and even this *better omitted than overdone*.

The reason why native grapes ripen their best fruit in tree tops and high places, is not because they get the sun, but because they are protected by the foliage, and are beyond reach of experiment; *they cannot easily be tampered with*.

In no case should the lateral be stopped where its leaves are necessary to cover the fruit or to shield the primary leaf, which exposed to the burning rays of a July or August sun in our climate, is liable to sunscald, to turn brown, dry up, and fall off. Whenever this primary leaf is lost the fruit does not ripen. We have a friend who "opened his fruit to the sun," by removing the leaves last September, whose grapes are not ripe yet. Another who boasted that he never saw mildew, did not know what it was. Owing to the scarcity of labor, his laterals grew long and the foliage enormous. He then directed an assistant to cut off the overhanging laterals with a sickle. It was quickly done, as he stated, and in these war times was a great saving of labor; but he has had no ripe fruit, and he both knows and has seen mildew, besides becoming the owner of a worthless vineyard, conducted "on the European plan." Cutting off the rank growth and removing the foliage checks the flow of sap, causing a violent reaction where it cannot be absorbed, and producing disease in the vine, whether old or young. "Papa," says our little representative of seven summers, "Is every one who raises grapes a Doctor?" What makes you ask that question? "Because, every body who comes to talk grapes with you is a Doctor." "That boy," says his grandmother, looking up from her soldier's stocking, "needs pinching-in. I'll see that you have a dose of pills, when you go to bed to-night, to keep down your animal spirits." How many of our K. G. C's are of grandmother's school of practice? To whose patients the Italian epitaph with a slight alteration would apply: "I was

well—my friends wanted me to be better—gave me physic, and here I am.” We hold the doctrine, that a healthy subject can brave and endure the hardships of life, with better prospects of surviving than one already feeble.

Our efforts to produce a healthy young vine having succeeded,—for on examination we find that the cane and its laterals are ripened to their very tips, and the buds are bespoken by the propagators, who say they like that kind of ripe wood for raising new plants—we now proceed to indicate the treatment necessary to make it bear healthy, sound, ripe fruit, year after year. At the end of the second season, the vine is represented thus, (see Fig. 1) and the same pruned

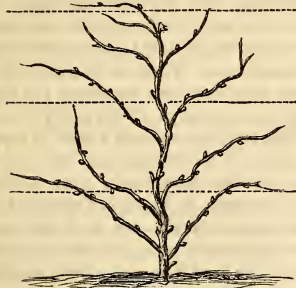


Fig. 1.

down for its third summer's work, thus (Fig. 2). Our K. G. C. tells us that we

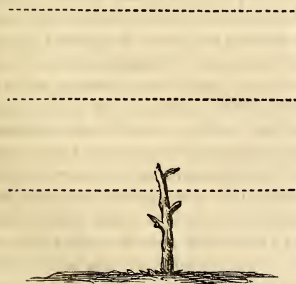


Fig. 2.

are behind the age. Next year, he says, you ought to have twenty pounds of fruit.

His process may be interesting to scientific cultivators, and our friends who are grape hungry may use it on a few vines in the garden, as they would force a pineapple, regardless of cost and of consequences.—Our treatise is for vineyard culture and we can afford to wait. The vine then being cut down to two feet from the ground, or at the first eye above the lower wire, we select three good eyes near the top, for growth the third summer, rubbing out all others, the upper bud is to be trained upward, and allowed to grow with its laterals as before, and may make six or eight feet in length of cane. The two lower buds are to be tied to the lower wire, which we place two feet from the ground. On our trellis we use but three wires two feet apart, instead of the usual five. These lower buds are to form horizontal arms for fruiting in the fourth year, and are to be allowed to grow without stopping; but the laterals are to be once pinched above the third leaf, and then suffered to grow the remainder of the season.

Tying up, and keeping the ground mellow by cultivation, is our prescription for the third summer. In the third autumn after the sap has performed its offices, and become a portion of the woody fibre, ripe, firm, ready to withstand the vicissitudes of a winter climate, we use the knife, cutting it this time four feet from the ground, and reserving three buds at the second wire to form two more arms and a leader, with the same treatment as before. Our lower arms are now each to be reduced to three feet in length. If the vine will not bear the climate, it may be laid on the ground and covered lightly with earth; enough to hold it there is sufficient. A Delaware may be tied up at once to keep it from swaying about in the wind, and may be exposed to a temperature of 20° without injury.

In the fourth spring we tie up the trunk of the vine to the trellis; the arms on the lower wire are to be disbudded of every alternate bud, reserving those that hang downwards as being most graceful, and al-

lowing five or six of the canes on each arm to bear one bunch of fruit, removing all the other clusters when the berries are of the size of small peas, and retaining the finest bunch of the three or four that set on each cane. A grapevine of this age, will overbear, if allowed to, and we must exercise great self-denial for its future good, the temptation to get thirty bunches of grapes instead of ten is almost too much for human nature to resist; but when we reflect that the one remaining bunch will be of much finer quality, *sure to ripen*, and when ripe, will weigh as much as the whole three, besides that the vine will retain its vigor, and will be able to repeat the exertion, and more too as it grows older, the wisdom of pruning the fruit will be apparent, and we shall be content to take off, at least two clusters out of every three. As we are averse to heading-in the fruit bearing canes, and pinching all through the season, we propose first to try the checking process, by a vigorous twist of the arm, say once in each foot around the wire, securing it at the end with a strong willow tie. If this twist is made in the right direction, it will do much to retard the rapid flow of the sap to the extreme ends of the canes; nourish the fruit thereon, and obviate the necessity of heading them in. All grape growers know that the growth is greatest at the extreme ends, and should know that stopping is unnatural, injurious and productive of no benefit to the fruit. It should therefore be avoided if possible. But we ask our class of readers, which way shall we twist it? The one who answers correctly shall go to the head. Nature has a spiral.—“What is the reason” says old Mr. Phogee, “that my Lima Beans all slip down from the poles, and never bear? Is it because the seed comes from the Southern Hemisphere, where every thing goes by contraries? I am particular to train them *with the sun*,” and he pulls out his antiquated bull’s eye silver watch, to show that the hands go with the sun, or else how could it keep time. But he forgets that the rays

of the sun come *down*, and that to go *up*, the engine must be reversed. We advised him to use a corkscrew for a quadrant when he next “took the sun.”

Nature’s upward spiral is from right to left. Keep the left shoulder to the pole, and walk around it. Every young architect should visit the monument erected in memory of Ledyard and his slaughtered companions, at Fort Griswold; ascend the spiral staircase set by a patent lever watch, and built by a mechanic who was left-handed! When we desire to twist a vine to *check the growth*, we go in the opposite direction, pass the cane at the left hand under the wire, then bring it towards you over the wire, while that on the right hand first passes over the wire, then under. If you twist with Nature, you do not arrest, but assist the growth: therefore this should be understood. When the fruit puts out on these arms let it hang downwards; it needs no tying, and shows all the better for it.

This year too, we train a cane to supply the place of the fruiting arm that is to be cut out late in autumn, after fruiting. The new cane to be trained upright from the junction of the arm with the stem, pinch its laterals once, but do not suffer it to fruit, or head it in, as it affords an outlet for all exuberance of growth, and with this treatment the cane is sure to ripen, which is absolutely necessary to its fruit bearing the next year, and indeed for future years.

In the autumn of the fourth year, we cut our vine six feet from the ground, arranging to have but two buds grow for arms on the third wire the following season, while we cut the arms on the second wire to three feet, and subject them to the treatment before indicated, for the arms on the lower wire, while the arms on the lower wire after yielding five or six pounds of grapes, supposing each bunch to weigh half a pound, are to be cut out near the main trunk, and the two canes bent down to take their place after being cut to three feet. These renewals are to take place annually, and each pair of arms are to be allowed to bear ten

or twelve bunches of grapes until the system is established—after which the quantity may be increased gradually to double that amount, whenever in the judgment of the cultivator the vine has strength to bear it—being well assured that it is able to ripen the fruit, and to ripen the canes at the same time.

On the “European plan” of pruning, Native vines overbear the third summer, become enfeebled, do not ripen wood for future bearing, and as the minute spores of the mildew seem to be ever present, and ready to seize on sickly, decaying, or dead plants, it does not make an exception of the vine. We seldom pay any attention to the visits of this one of Nature’s scavengers until the mischief is done, and then begin to enquire: What is the matter? and what is the cure? We think it better to en-

quire, what is the prophylactic? What will prevent it? And our general answer is, avoid the European plan of cultivation; plant only healthy, vigorous vines; do nothing to enfeeble them; do not stimulate them to extra growth; and then try to stop or force it in some other direction. Remember the tight-laced belle, who crowded her waist into her shoulders, and became a hunchback. Do not encourage precocious fruiting; that it may be done is no reason why it should be. Do not stop or cut off growing canes; and yet, every treatise and direction for training the grape vine, present and recommend these glaring fundamental errors.

In short, let us without delay *confess our mistakes*; (all honor to Bright) issue an emancipation proclamation, and adopt an AMERICAN SYSTEM.

FORESTS AND FOREST TREES.—THEIR PRESERVATION, &c.

BY C. N. B.

WE feel proud of the natural features of our country, our rivers, our hills and mountains are varied and grand in range and height; our fossil and mineral resources inexhaustible, and intrinsically of the most valuable kinds; our soil productive of the comforts and the most useful of sylvan productions. These natural features correspond with the extent of our territorial bounds and the nobleness and excellence of our civil institutions. The hills, and the mountains, and the rivers, are in the keeping of the Creator, having received the immutable stamp of nature; but the preservation of our forests, like that of our liberty, is obliquitory on ourselves. By a provident care both will live for ages. The venerable grey-headed patriots among us, who appear to be intuitively prescient, point tremblingly and fearfully to the daring and reckless woodman and politician, so sacrilegiously approaching the forests and the constitution of the land.

Placing in such equal importance our liberty and our forests, may seem to some to be over-rating the one and underrating the other; but when it is recollected that we, as expressed by a Roman naturalist, “by the tree we navigate the ocean, cultivate the earth and build our houses; it should not be considered an unpatriotic union.” What would have been our commercial importance and our naval standing among the nations of the earth, had it not been for our forests? Let any one reflect for a few moments on the immeasurable uses to which the tree is devoted, and consider how intimately connected are our comforts and pleasures with its great value and primary importance of our forests; he will see that the least scarcity or advance in price very materially affects every branch of trade and every department of domestic pursuits.

It must be a subject of astonishment to observe the wonderful intermixture and

seemingly inseparable connection between both moral and physical good and evil; to see that the same thing which we at one time dread with abhorrence, at another time, and perhaps under different circumstances, becomes a subject of pleasing admiration. We often hear heart-rending tales of the gloomy forest, in the compass of nature's works surpassing those of the forest.

The emigrant to an unsettled country, looks upon trees as so many savage enemies which he must conquer and exterminate before he can hope for enjoyment of peace and tranquility. When other emigrants settle around him, and they begin to direct their united efforts towards arriving at a state of civilization, they see nothing in their mind's eye but cultivated fields, with meadows and pastures, with all the stumps eradicated, and not a single cluster of trees to interrupt the view. If a single patch is left for fire-wood, it is often sneered at, as it is cheaper to buy wood than to devote the ground to its incumbrance.

But the population increases, perhaps becomes a village or city. The demand for firewood increases, and timber is wanted in all the various departments of ship and house building, carriages and other branches of manufacture, and every patch of forest vanished before the foot-steps of cultivation, like patches of snow before the vernal sunshine, until, as is the case in some parts of this country, every piece of timber has to be brought from a great distance, if not even imported from a foreign country, and coal dug from the earth for fuel.

In this state of things, sober reflection, which though a slow, is often a correct teacher, shows us by costly lessons what it would have taught before, had it been consulted, that if instead of wastefully destroying and exterminating the forest trees, they had been used with prudent economy, when necessary, and skillfully managed and preserved, they might have contributed largely to pleasure and to profit.

But when the folly has been committed and its consequences are beginning to be

sensibly felt, what remedy can be applied, if not to afford immediate relief, at least to prevent posterity from suffering by its effects? The still small voice of common sense, confirmed by the examples of several nations of Europe, points to the remedy. The first step is to apply to some well established nursery where all the most valuable trees could be obtained at moderate prices; a few would avail themselves of their advantages, and the force of example would soon excite the multitude to follow them, and in a few years, those who live to see our dwellings, which now stand as unornamented as milestones, tastefully surrounded by beautiful trees, and their value doubled in the eye of most purchasers; they would see our public roads lined with extensive rows of valuable trees, and last, though not least, our farm houses would be sheltered in their situations from bleak and destructive winds by belts of pine and fir trees, and their cattle and sheep would find protection from the blasts of winter, and places of repose from the sultry summer heat.

The uses of forest trees to which we refer, are for shade, for timber and for fuel. A tree forms part of almost every implement and every machine by which the genius of man has taught him to lighten the labor of his hand.

Of shade trees both for timber and ornament, we have indigenous, a greater variety than any other nation.

Every man of landed property that lies out of arm's length of a village or town, should plant trees. Even an old bachelor, who has no right to become a father, is not only free, but is in duty bound to plant a tree.

People are sometimes prevented from planting trees from the slowness of their growth. What a great mistake that is! a strange fear to feel, a strange complaint to utter—that any one thing animate or inanimate, is of too slow growth, for the nearer to its perfection, the nearer to its decay. Let any one who accuses trees of laziness in growing, only keep out of sight

of them for a few years; and then returning home to them under a cloud of night, all at once open his eyes on a fine sunny summer's morning, and ask them how they have been since he and they mutually murmured farewell! He will not recognize the face on the figure of a single tree. That single maple whose top-shoot, a cow you know, browsed off, to the breaking of your heart, some four or five years ago, is now as high as the gable of the cottage, and is murmuring with bees among its blossoms, quite like an old tree! What precocity! That elm hide bound, as it seemed to you,

and with only one arm that it could hardly lift from its side, is now a Briarius. Is that the larch you used to hop on? now almost fit to be a mast of one of the cutters or yachts of the Hudson! you thought you would never have forgotten the triangle of the three birches; but you stare at them now as if they had dropped from the clouds! and that birch—that round hill of leaves—is not the same shabby shrub you left sticking in the gravel, why, call the old gardener hither and swear him to its identity on the Bible.

Pokeepsie, April 5th, 1865.

CURIOSITIES OF VEGETATION.—No. II.

AMONG the most remarkable and beautiful specimens of our own vegetation, we may reckon the *Magnolia Grandiflora*. It bears flowers seven or eight inches in diameter, and of a fragrance sufficient to load the surrounding atmosphere with sweets. This superb tree has not unfrequently a straight trunk ninety feet in height, with a fine pyramidal head of foliage and white blossoms.

The *Agave Americana*, when it is fully grown, sends up a gigantic flower-stem, which rises from thirty to forty feet high. The topmost fifteen feet of this stem often bears hundreds of greenish-white flowers, growing at the extremities of branches symmetrically arranged around this huge stalk.

The *Talipot Tree*, peculiar to Ceylon and the Malabar coast, grows to a great height, and sends forth its branchless leaves from its summit. These leaves, when on the tree, are nearly circular, and from thirty to forty feet in circumference, so that ten or a dozen men can find shelter under one of them. They are of a dark green color when expanded, and can be closed and opened like a fan. They are used as a shelter against rain and heat, as a covering for tents, as fans, and as paper. The flower shoots pyramidically above the leaves, and

often adds thirty feet to the height of the tree. It is at first a cluster of bright yellow blossoms, of pungent odor, and bursts from its hard enveloping rind with a sharp noise.

The *Erythroxylon Coca* is a shrub from six to eight feet high, with numerous small white flowers, and greatly resembles a straight-growing black-thorn bush. The leaves are used by the inhabitants of Peru for their peculiar effects upon the nervous system. Masticating the *Coca* leaf, the Peruvian, when inveterately addicted to this indulgence, remains in the forest for two or three days, heedless of night, or of the tremendous storms that sweep over him. At length he returns home, pallid and trembling, to recover from his intoxication only to yield again to the fascinations of his indulgence, until premature death closes his wretched career. The leaves are chewed with finely powdered lime. The consumption of *Coca* is universal in Peru.

The *Cerbera Tanghien*, or *Tanghien Tree*, resembles a plum, and is used in Madagascar to detect criminals. Its fruit is a swift and deadly poison. When employed as a test of crime, the accused is made to eat as much boiled rice as possible, and to swallow several pieces of the skin of a

fowl, without masticating them. A quantity of the tanghien nut, mixed with the juice of the banana, is then administered. Curses are then denounced on the person undergoing the ordeal, if guilty. Rice water is given soon after, in copious draughts, till vomiting ensues, and then, if the several pieces of skin are found, the accused is acquitted, but if they are not found, he is condemned. There is plenty of room for jugglery in this ordeal, and the administrators can make it fatal or not, as they please.

The *Antiaris Toxicaria*, or Upas Tree of the Indian Archipelago, sometimes attains one hundred feet in height, and eighteen in circumference near the base. It is generally straight, and has a smooth white bark. The fruit is velvety, and not unlike a purple plum. The tree is found in fertile spots, and is not avoided by animals as has been stated, for lizards and insects have been seen upon its trunk, and birds upon its branches. But in clearing grounds near this tree, the inhabitants do not like to approach it because it produces a cutaneous eruption when newly felled. The juice of the Upas is prepared by the natives in a peculiar manner, and used to poison their arrows.

The *Araucaria Imbricata*, of the Patagonian Andes, is thus described by a traveler: "When we arrived at the first *aranarias* the sun had just set; still, some time remained for their examination. What first struck our attention was the thick roots of these trees, which lie spread over the stony and nearly naked soil like gigantic serpents, two or three feet in thickness; they are clothed in the same rough bark as the lofty pillar-like trunks, which are from fifty to a hundred feet in height. The crown of foliage occupies only about the upper quarter of the stem, and resembles a large depressed cone. The lower branches, eight or twelve in number, form a circle around the trunk; they diminish till there are but four or six in a ring, and are of a most regular formation, all spreading out horizontally, and turned up at the tips.

They are covered with leaves like scales, sharp pointed, above an inch broad, and of such a hard texture that it requires a sharp knife to cut them from the parent branch.

"Its fruits, placed at the end of the boughs, are quite round, and about as big as a man's head, and consist of beautiful layers of scales that cover the seeds, which are the most important part of this truly noble tree.

"A single fruit contains between two and three hundred kernels, and there are frequently twenty or thirty fruits on one tree; and as even a hearty eater among the indians cannot (except he be deprived of every other kind of sustenance), consume more than two hundred kernels a day, it is easily seen that eighteen *Araucarias* will maintain a single person for a whole year."

The *Stagmaria Vernicifera*, or Varnish Tree, is a native of the Eastern Archipelago, and attains a considerable size. The leaves are smooth and shining and the flowers white. A resin exudes from the bark, which blisters the skin; this resin soon becomes hard and black, and is sold at a high price for varnish. It is said that this tree produces the famous Japan lacker.

Trees yielding vegetable soap are found in the tropical parts both of the Old and New World. In the East Indies soapberries are to be bought in every bazaar. The fleshy part of these berries is viscid and assumes a shining, semi-transparent appearance in drying. They form a lather when rubbed with water. The bark and roots of the plants yielding these berries possess similar properties.

The *Croton Sebiferum*, or Tallow Tree, is a native of China, and resembles a pear tree. The trunk is short and thick, the bark smooth, the leaves dark purple, or bright red, and the blossoms yellow. The fruit is contained in a husk which opens when this fruit is ripe, and discloses three white grains about as large as a nutmeg. These yield the vegetable tallow which, when properly prepared, makes excellent candles. There are also tallow trees found in other countries.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

WOODWARD'S GRAPERIES AND HORTICULTURAL BUILDINGS now published and ready for delivery; price \$1.50, post-paid by mail.

This work contains above 60 illustrations of the various forms of Horticultural Buildings, and gives complete practical instructions relative to design, construction, heating, ventilation, &c. A book for everybody who contemplates erecting glass structures and extending their enjoyment of Horticultural pursuits.

DEATH OF DR. GEO. PEPPER NORRIS.—We regret to learn of the death of this distinguished horticulturist, which took place at his residence near Wilmington, Del., on the 7th of March, of typhus fever, contracted in discharge of his medical duties, in the early prime of manhood, amid the regret and sorrow of the community in which he lived. Dr. Norris is well known to many of our readers as a frequent contributor to the *HORTICULTURIST* on "Orchard House Culture," "Cold Graperies," &c., and has done much to make them popular.

FRUIT BOXES.—Those who raise the small fruits for the great markets of New York, Philadelphia, and other large cities, have long felt the need of a low-priced box that shall serve the purpose of transporting the fruit, and that may be sold and delivered with its contents; and the consumer here who, oftentimes, buys fruit only when he sees it, has wished for some convenient manner by which he can carry it home. What is true of everything else in New York is equally true in regard to fruit.

Let the quality be fine, and the appearance magnificent, and it matters little what the price may be. Strawberries, or berries of any kind, put up in neat clean boxes of reliable measure, sent to this market and sold with the box, will pay the producer a better profit, box and contents, than the same fruit marketed in a stained, sour, filthy box, that all the season through is an annoyance and a loss to the grower, by breakage, miscarriage, expenses of return, and many other misfortunes.

We have received from Mr. Edmund Morris, of Burlington, N. J., author of "Ten Acres Enough," and of several admirable articles in our own columns, samples of a fruit box of his own invention, pint and quart, which admirably solves this hitherto intricate problem. Compact packing, ventilation, strength and low price are fully provided for, and as Mr. Morris is a practical man in the berry business, he knows precisely what is wanted, and we believe has fully met the want. They are so contrived that they may be packed "in the flat," by which great numbers occupy little space, and can be forwarded cheaply to any part of the country, when they are readily put together by any member of the family. We understand arrangements have been made to manufacture them in large quantities. Those who are interested in such matters can see samples at this office.

THE article on "*Growing Cranberries*," in our last number, credited to the *German-town Telegraph*, first appeared in the *Boston Cultivator*, the editor of which prepared the article with much care, and after a personal visit.—"Honor to whom honor is due."

RAISING SEEDLINGS.—“Affected two or three years with the grape fever, and never saw the HORTICULTURIST till last January.” Prodigious! can it be possible? Here at least is an honest man, and I offer him my hand grapeiously.

I am an old admirer and reader of your journal, and have added many subscribers to your list, *con amore*, but in all my solicitations I have never found a man who would acknowledge that he never saw it. All read it. Most of them took it, and thought it a “good thing.” “But,” says I, “you have not seen the May number? you know my facilities, etc., and I have brought it over to show you the marvelous improvements of Lackland’s house,” and thus I come away with the \$2.50 each from X. and Y., which is herein inclosed. It is rather mortifying to think that an individual on the frontier (none of my neighbors would do such a thing: they are all “honorable men”) should pay over his money so readily, because he was caught in a *suppressio veri*. But to the point. If Dr. Merrick lived ten miles from here, instead of several hundred, I would furnish him with thousands of young grape plants—Isabella, Catawba, Concord, Creveling, *et id omne genus*. They spring up all over my grounds—in the grape-house, hot beds, and in pots—or wherever I use compost. Last fall, when I made my wine, I directed that the marc should be placed on my compost-heap. It was afterwards turned over, and became thoroughly incorporated, exposed to the frosts of winter, and thus prepared to vegetate with the early warmth of spring. Hence the young seedlings, so abundant as to have become absolute weeds to be hoed up. Judging from my own experience, the seeds all grow—not here and there—but everywhere at once. I have planted grape-seeds of many sorts, and whole grapes in pots, with bottom heat and otherwise. In 1863 I had five seeds germinate. In 1864, none. In 1865, thus far, one!

Hopefully yours,

WILLIE MAY.

near Dover, Del., May, 1865.

THERE will not be more than a fourth of a crop of Peaches in this (Kent) county, and this is the great peach-growing part of the State. I have had the Delaware grape from about the first, and it has given me a crop of nice fruit every year—and so has the Concord and Hartford Prolific. I have tried all the new kinds that have been sent out for several years, and find them worthless, except those above named. I fruited the Bland or Powell last year, and to my taste consider it better than any of the new grapes, and it is more sure here than Catawba or Isabella. I see the wise grape-men say that Union Village and Ontario are the same. Not so with me—quite different—both bad.

Yours,

P. H.

BUFFALO, April 17, 1865.

MESSRS. WOODWARD:

I have a peach farm in Delaware, and our great want there is a suitable apparatus for drying fruit. Can you say or do anything on this head in your May number?

N. A. H.

[Will some one give the needed information.—Eds.]

THE CENTRAL PARK.—On visiting the Central Park, early in May,—our first visit since the opening of the Spring,—we were struck with the evidences of the severity of the past winter, especially as it affected the evergreens, of various kinds. The tender wood and sprays of the Pine and Spruce tribes seem to have been essentially damaged by the frost, and many of the finest of these trees were as brown and sere as if they had just passed through a severe late-summer drought. We have since noticed the same effects upon the evergreens scattered throughout the city, and particularly upon the English Ivy upon the walls of several of our city churches and private dwellings.

The evergreen trees will gradually recover, but it will be some weeks, perhaps, be-

fore they will regain their usual healthy and luxuriant appearance, while their annual growth will undoubtedly be diminished by these damages. The Ivy has, in many places, been partially killed, down to the roots, and will be forced to make new wood. It would seem that the past winter has been unusually severe in this respect.

ROBERT HERRICK was a lyric poet of great eminence, who lived in the seventeenth century, in the time of Charles the First. We lately came across the following sweet and tender lines which we copy for our readers.

THE DAFFODILS.

Fair Daffodils, we weep to see
 You haste away so soon;
 As yet the early rising sun
 Has not attained his noon.
 Stay, Stay,
 Until the hastening day
 Has run
 But to the even-song;
 And having prayed together, we
 Will go with you along!

We have short time to stay as you;
 We have as short a spring;
 As quick a growth to meet decay
 As you or anything;
 We die
 As your hours do; and dry
 Away
 Like to the summer's rain,
 Or as the pearls of morning dew,
 Ne'er to be formed again.

PESTS OF THE FARM.—It is not weeds, worms, blight, nor bug, that prove the greatest pests of the farm. Even a sheep-killing dog can be endured once in a while. Book peddlers and subscription agents are mild pests, compared with some of the tree peddling variety. The West has been terribly afflicted in this respect. The veriest trash of Eastern nurseries has been sold as first-class, at first-class prices. But that is not the worst of it. A farmer subscribes for a Delaware grape-vine, gets one so labeled, which, after nursing three years, proves to be the most worthless thing in the whole catalogue. At the present time the farmers of Vermont are being fleeced

by scoundrels who are selling apple trees grafted upon crabstock, warranted to withstand the Winter and all the diseases that have killed off orchards in that State, and to produce marvelous crops of apples upon these "dwarfed trees." The white willow humbug has drawn a quarter of a million dollars out of farmers' pockets into those of the peddlers.

Another most prolific pest is him of the patent churn: a machine with crank and wheels, and paddles and air tubes, that will convert the entire milk into butter and give more pounds than were put into the butter mill, and of vastly a better quality than any other contrivance yet invented. The farmer, tired of the old dasher, buys the thing of cranks and wheels, gives it a patient trial and consigns it to the garret or some other old lumber receptacle. Our advice is, whenever churns are offered that will make butter in three minutes and some odd seconds, that it would be the safest plan to consign them to the lumber hole without trial.

The wine plant man is another pest that farmers should set the dogs upon, the moment he opens his mouth. He has nothing in this world to sell you, except some toes, or offsets of the rhubarb, or pie-plant roots, which you have already growing in your garden, and which you may increase by propagation to any desirable extent, if you desire to grow the stalks for the purpose of making a beverage by courtesy called wine. It is no better wine than you can make of the acid juice of any fruit, and there is nothing that we know of that is used for this purpose that does not make a healthier drink than this notorious "wine plant." The reason is that the acid of rhubarb stalks is oxalic; of grapes, tartaric; of apples and tomato, malic; of currants, gooseberries, raspberries, strawberries, citric and malic combined. All of these acids are more wholesome than oxalic. The only really wholesome wine is pure grape juice. The next most wholesome beverage is pure juice of sound apples, well

fermented and corked tight to prevent it from passing into ascetic acid, which, although not unwholesome in small quantities, as we use vinegar, would be so if taken in quantities as cider and wine is drunk. So with wine made of rhubarb juice—water, oxalic acid and sugar—fermented until the sugar is converted into alcohol, may be used in moderate quantity without serious injury; but if drunk freely as grape wine or cider, the effect would undoubtedly be deleterious. It will be the same with all the other concoctions of fruit juice and sugar. Let them be used in great moderation, or they will prove pests of the farm.—*Tribune.*

STRAWBERRIES.—Three great traveler's dishes of strawberries are in my mind.

The first was at an inn in the quaint Dutch town of Broek: I can see now the heaped dish of mammoth crimson berries,—the mug of luscious cream standing sentry,—the round red cheese upon its platter,—the tidy hostess, with arms akimbo, looking proudly on it all: the leaves flutter idly at the latticed window, through which I see wide stretches of level meadow,—broad-armed windmills flapping their sails leisurely,—cattle lying in lazy groups under the shade of scattered trees; and there is no sound to break the June stillness, except the buzzing of the bees that are feeding upon the blossoms of the linden which overhangs the inn.

I thought I had never eaten finer berries than the Dutch berries.

The second dish was at the Douglas Hotel in the city of Edinboro'; a most respectable British tavern, with a heavy solid sideboard in its parlor; heavy solid silver upon its table; heavy and solid chairs with cushions of shining mohair; a heavy and solid figure of a landlord; and heavy and solid figures in the reckoning.

The berries were magnificent; served upon quaint old India-china, with stems upon them, and to be eaten as one might eat a fig, with successive bites, and successive dips in the sugar. The Scotch fruit

was acid, I must admit, but the size was monumental. I wonder if the stout landlord is living yet, and if the little pony that whisked me away to Salisbury crag, is still nibbling his vetches in the meadow by Holyrood?

The third dish was in Switzerland, in the month of October. I had crossed that day the Scheideck from Meyringen, had threaded the valley of Grindelwald, and had just accomplished the first lift of the Wengern Alp—tired and thirsty—when a little peasant girl appeared with a tray of blue saucers, brimming with Alpine berries—so sweet, so musky, so remembered, that I never eat one now but the great valley of Grindelwald, with its sapphire show of glaciers, its guardian peaks, and its low meadows flashing green, is rolled out before me like a map.

—*My Farm of Edgewood.*

THE OLD ORCHARDS.—It saddens the thoughtful man who travels through the country—especially the older settled sections—to see the grand old orchards, which have furnished the cellars of the old homesteads with cider and fruit from the early time, dying of old age, with no thrifty young orchards about them—to see the broken limbs, the dying and dead trunks, the scarred and diseased veterans passing away with no young recruits coming after to make glad the succeeding generation.

What can the old folks be thinking about? What are the middle-aged inheritors of the old homestead or its old orchards, sleeping over, that they neglect a positive duty, (to say nothing of the profitable investment of family funds,) to their children? Is it the selfish spirit which has possession of you—the spirit which says, "The old orchard will furnish fruit as long as I live, let my children take care of themselves?" Then you do not deserve the ministrations of the young in your old age, when your eyes grow dim and your limbs palsied. No, no, we can not believe that it is positive indifference to the welfare of your children. But is not the thoughtlessness which permits the old

orchard to die without supplying their places with young ones criminal? Is there any feature of a homestead to which are attached so many pleasant associations as to the Orchards? It is the paradise of the young and the delight of the old. Each tree has its associated event. The fruit of each tree has impressed its outline and flavor, its texture and color, upon your boy, and he recalls these peculiarities as he turns the prairie furrow, crushes quartz in California, traffics with the Japanese, or fights for the Union in our armies. How strong a knot has the old orchard tied in his heart, binding him to the old home and the hearts that dwell there. The birds sing to him out of the orchard. The May-blossoms breathe their fragrance into his nostrils—the Spitzenbergs and Pippins, the Harvest Boughs and Greenings, and the peculiar and luscious “natural fruit,” that grew on a seedling too good to graft, laugh at him as they show their cheeks from behind their emerald screens—and oh! how he longs to visit the home of his childhood and live over again the days of his youth. Such is our inheritance, reader! Such the patrimony which comes down to us from the orchards of our fathers, no matter where we may be settled, or where we may wander. Would we part with this birthright? Would we deprive our children of it?—or our children's children? If not, new orchards must be planted. The old ones are passing away.

As we wrote in the outset, it is saddening and astonishing that people who have lived so long in the world and enjoyed the fruit of their labors, and of the labors of their fathers, should be so indifferent to this matter of renewing the orchard. It is the season to prepare for next spring's planting. The young men who have asked us how to prepare land for orchard planting may now do this work well. Plow and subsoil the land to be occupied, thoroughly. Do not forget—*subsoil* it. Let it lie until spring and again plough it, (or pulverize it in some manner,) manure it with good compost

thoroughly incorporated with the soil, if it needs it, and then plant. Don't plant a young orchard in the sod. Do not allow any sward to make 'round your trees so long as you and they live. Cultivate them as you do corn and they will yield you far greater grofit in proportion to the labor bestowed.

But the object of this article is to impress the importance of providing substitutes— young, healthy, and full of vitality—for the maimed, scarred and dying veterans in the old orchards.—*Rural New Yorker*.

SUMAC.—ITS USE, VARIETIES, PRODUCTION AND VALUE.—CAN IT BE PROFITABLY CULTIVATED?—“Why cannot we raise our own Sumac?” asks *The Gardener's Monthly*. Sure enough, why not? It says that Sicilian Sumac has lately been “\$250 a tun, and scarce at that.”

“The species from which the sumac of commerce is obtained is a native of the south of France and the Mediterranean coast—the *Rhus coriaria*, or leather sumac of the botanists. We do not know that the plant has ever been tested to endure our climate. If it has been introduced here it is not in any collection of trees we know of now, which would indicate that it will die out, and is unfit for our climate. So many things from the Mediterranean live here, that one would suppose there would be no difficulty with it; but the *Rhus* family is a capricious one in this respect. The *Rhus cotinus*, from Central Asia—the common mist tree of our gardens—is quite hardy in our severest winters; while the *Rhus succedaneum*, from a part of Japan, whence we get so many hardy things, will not live here in quite mild seasons. It is worth while for some one in the leather interest to reimport some seeds, at any rate, and try the leather sumac fairly.

“Our *Rhus* family ought to have a good overhauling about their economic uses. All over the globe they have been turned to good account. Other countries have but a few species compared with ours. We have

ten distinct species in the United States, besides many varieties.

"The mist tree, heretofore referred to, has wood which dyes of a beautiful yellow color. This wood is, in the 'drug language' of Europe, 'young fustic'—the true fustic being allied to our osage orange. The 'mist' of the tree, while yet succulent, is very astringent, and might be turned to useful purposes. The celebrated Japan varnish is made from the *Rhus vernicifera*; but it is now clearly ascertained that this tree is nearly identical in all its properties with the *Rhus venenata* of our country,—the Poison-Ash, or Swamp Sumac, too well known to many of us by its virulent properties, and the more likely on this account to be of vast service when turned to proper uses.

"The *Rhus typhinum* (Stagshorn Sumac) has actually been employed for tanning purposes in times past; and that it has fallen into disuse is, we imagine, only that the foreign product of *R. coriaria* could be imported cheaper than our own could be collected. Though spread over the whole United States, from Canada to Florida, it is not abundant, we believe, in any one locality; but, as it will grow in the poorest waste places, among rock, stones, etc., where little else will, if found to be what is wanted, it would be a good paying crop to grow.

"The common dwarf Sumac, which is so abundant over the whole Union, on every barren hill and rocky glen, and which gives our landscape scenery, in the fall, such renowned and matchless beauty, is the *R. glabra*, or *R. elegans*, of some old botanists. This has also been employed in tanning; but not, we believe, so effectively as the others,—careful experiments might find it more useful than now supposed. Other economic uses might be found for this plant besides tanning purposes. A beautiful black ink-like tincture can be made from the wood boiled with the berries; and from the berries themselves, a beautiful red dye can be prepared. The acid contained in

the berries is supposed to be bimalate of lime.

"*Rhus copallinum*, or Copal Rhus, by its name might be supposed to have some relation to the varnish producing species; but we are not aware that it is particularly favored in this way, and suppose its name is rather in reference to its shining leaves, which appear as if varnished. It may be worth looking after, however, by those disposed to investigate the virtues of the Rhus family. By the way, we may here correct one of the hundreds of errors in Wood's, otherwise very useful 'class book.' He says, *Rhus pumila*, of Michaux, is from one to two feet high; and that *R. copallina* is not 'half the height' of *C. pumila*. The Copal Rhus in low rich grounds grow from eight to ten feet high; and in the dry, poor sandy soils of New Jersey, where it abounds, it is usually from two to four feet.

"The whole tribe is rich in gums. The celebrated 'Hog Gum' of West India Islands, is from *Rhus metopium*, and the Japan Wax is from *Rhus succedanium*,—both too tender for the Middle States; but will no doubt 'come into play' when the labor question in the Southern States has full play to develop itself.

"Probably the *Rhus aromatica* of the South-western States, and the *Rhus laurina* of California, will also prove profitably ceriferous,—but we can merely throw out the hint."—*Tribune*.

"FACTS ABOUT PEAT," a neatly-printed work in paper covers, by T. H. Leavitt, published by Leavitt & Hunnewell. Boston: Price one dollar.

The origin and composition of peat, and the usual method of preparing it for fuel, together with uses to which it may be applied, are carefully investigated. A patent for preparing peat by a new process is owned by a company now forming, of which the publishers are agents. They claim thorough success with the new process.

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PRUNING THE PEAR TREE.

THERE is no end to the questions put to us on this subject. In these days, when every proprietor, from a half acre and upwards is interested in the culture of the pear, either as a grower for the market, or as possessing some half dozen pets which he tends for his own gratification, there is a constant inquiry as to "how shall I prune?" "what is the best shape for a pear tree?" "is there danger in pruning a young tree too severely?" "at what season should pruning be done?" and a host of like pertinent questions. Most of the books in our language which treat on Horticulture, give, or pretend to give, some instruction on the subject; but it is a very difficult subject to bring home to the comprehension of the amateur. It is a branch of knowledge acquired only by considerable experience and practice; and in fact it is a rare thing to find either among our nurserymen, professed gardeners, or amateurs, one who is thoroughly posted in this particular.—Every one prunes, and every one thinks he

knows how to prune, but beyond doubt there is a great deal of very bad pruning, and a want of proper knowledge is the rule, the exceptions so rare as to give abundant proof thereof.

For the purpose then of answering these many inquiries, and to give a standard article of instruction on the subject, we have thought best to refer to a writer whose reputation as authority stands very high, and who gives his instruction with more detail and perspicuity than any other within our knowledge. We have taken the liberty of translating and appropriating bodily from the work of M. A. Du Breuil, entitled "Cours Elementaire D'Arboriculture," a chapter on the pruning of the pear, and particularly the "pyramidal pruning," which, in his judgment, as also in our own humble one, is the shape best suited to the pear tree.*

* The cuts illustrating this article we have at considerable expense, and with great care re-engraved from the originals in the work above-named.



FIG. 447.

PRUNING OF THE PEAR IN THE PROPER
PYRAMID SHAPE.

It must be borne in mind in the first place, that the flower buds of the pear only appear on the least vigorous parts of the tree; that they start directly from the principal ramifications, or from vigorous branches which have been mutilated, on

shoots, or in fine, on little spurs; that these rarely fruit during the year which follows that of their formation; that they do fruit sometimes in two years, but usually in the third year; that at first the flower bud is placed at the extremity of a little support which is successively lengthened, and which takes the name of *lambourde*,* (fig. 465);

FIG. 465.—*Lambourde*.

that this *lambourde* at first simple, branches after the fruiting of the primitive bud, and that it can thus yield annually, and for an indefinite time new fruit, provided it is not allowed to become exhausted by over fruiting, or by the diversion of the sap to other parts of the tree.

It is a great point then while giving shape to the tree, at the same time to force the development of these *lambourdes* of which we have just spoken, throughout the extent of each of the branches, and to make sure of the alimentation of the *lambourdes* by a sufficiency of sap; to prevent in short the development of useless growth, which would cause a confusion, and absorb a part of the sap which should go only to the formation of the structure and the fruit branches. This much premised, let us make application of the same to the formation of a pear tree into a pyramid.

One rarely meets in the nurseries with young trees well suited to form pyramids. You find either grafts of a year old, often too weak to receive a first pruning, (fig. 467) or else grafts of two or three years old, which show at their base none of those

* *Lambourde*.—We have no word answering exactly to this, and as it is used technically throughout the article, we prefer to keep to the original.

branches indispensable to commence the formation of these trees (fig. 468).

When you have but to choose between these two sorts, it is best to give the preference to grafts of one year; the stalks less hardened towards their base will develop more readily the necessary buds.



FIG. 467.—First Pruning.

After having planted them with the care which we have elsewhere prescribed, avoid giving to these trees a first pruning during the same year of their planting; wait until the following year. This first pruning would have the effect to deprive them of a number of branches, and in consequence, of the buds which they carry; and the mass of leaves which they might have developed would thus be greatly diminished. The roots would then develop less, would take less hold in the soil, and the final result would be, that the shoots, the growth of which you desire to promote by this pruning, would be weak, puny and little adapted to commence with the structure of the tree.

In waiting, on the contrary, to the following year, the tree will have become rooted anew. If now, you suppress a large portion of the branches, the sap, abundantly supplied by the roots, will react with force on the evolution of the buds reserved, and you will obtain during the first summer longer shoots than you would have in two years by following the first mode of operating. You thus find yourself placed under much more favorable circumstances to give to the structure a proper shape, and you gain time besides.

Nevertheless, if the roots of the young trees were injured to any degree, you should shorten in the branches in proportion to the mutilation the roots have undergone, so as to maintain an equilibrium between them and the trunk. The same shortening in should be practised, in case the young trees should present any very long branches, which offering full play to the wind, would shake the roots and prevent them taking proper hold; but it is readily seen that these shortenings are very different in their effects from those of a first pruning.

These observations equally apply not only to the pear tree subjected to other shapes, but in fact to all other fruit trees, with the exception of the peach.

First pruning.—This operation which is the same for grafts of one or two years old, and for young trees badly shaped in the nursery, consists in cutting the trunk at about 0m. 60* from the ground, at A, (figs. 467, 468).



FIG. 468.—First Pruning for young trees badly formed.

The object of this pruning is to induce the appearance of vigorous buds, destined to form the first ramifications from the base of the pyramid.

* The French metre is equivalent to 39.38091 U. S. inches, this would be somewhere in the neighborhood of 24 inches from the ground—we reduce to inches the other measurements given.

These ramifications to the number of six or eight, should be at equal distances from the top, to within about 12 inches from the ground. If you preserve a greater number you would have to draw them in more by shortening, and the little branches which would start from them, would not permit the light, indispensable to the fruit to penetrate to the centre of the tree.

The terminal bud is destined for the prolongation of the stalk. You should always choose it from the side opposite to that on which the graft was inserted in the stock, in order to dress this stalk as much as possible. It has been recently proposed to obtain the side branches of pyramids by means of notches cut each year immediately above the buds of the successive prolongations of the main stalk.

It is thought by this means to avoid the yearly suppression of a certain extent of the prolongation, to force the development of all the buds, and thus to hasten the formation of the structure, in obtaining at once a large number of lateral branches.—But the quantity of sap which flows into these prolongations is insufficient to cause all the buds they carry to develop into sufficiently vigorous branches.

In these prolongations left to themselves, you see, in fact, only the five or six neighboring buds at the top develop at all. If then you should notch all the buds of these prolongations not pruned, you would only force the sap to distribute its action equally among them. They would all develop; but instead of having five or six vigorous well formed branches, as when these prolongations are properly shortened, you will have fifteen or twenty little trifling ramifications, weak and perfectly useless for the purposes of principal branches.

After then, that the main stalk has been cut back, as we have just said, and during the following summer, the greater number of the buds it carries, and even the *latent buds* develop with vigor, especially those placed near the top. When the started buds have attained a length of 4 to 4½

inches, which will be at about the beginning of June, you must put in practice the process of *disbudding* and *pinching*.—You will suppress all the buds from the ground up to 12 inches on the main stalk. As to the others above this point, you will preserve six or eight of the best disposed, that is to say, those placed most regularly at equal distances. The terminal bud is kept in a vertical position by means of a little prop fastened to the stalk as in fig. 469.



FIG. 469.—Second Pruning.

If, as it sometimes happens among the *latent buds*, several shoot from the same point, you should keep but one. The shoots which these buds would produce would result in a confusion; and moreover if you wished to make branches of any of them, you would sooner or later find one become more vigorous than another.

In short you should watch with the greatest care that the lateral shoots preserve among themselves an equal degree of vigor. If one among them presents a disproportioned growth, pinch off its herbaceous extremity so as to retard its vegetation.

During the first, and sometimes during the second summer which follows the first pruning, the lateral shoots push with so much vigor, that they twist themselves on all sides. It is necessary then to insure them a right direction, by fastening them to

stakes driven obliquely into the ground at the foot of the tree. The lateral buds which develop directly from the annual prolongations of the tree, take of themselves the proper direction.

Second pruning.—After these attentions the tree will present the appearance exactly as seen in figure 469.

In treating of nurseries, we have expressed the desire of seeing the practice prevail, (as yet very rare) of giving to the young graft a shape in conformity with its intended form. We have indicated that which trees intended for the pyramidal shape should have. It is in all respects that of figure 467. When you are fortunate enough to fall in with such trees, you should not hesitate to give them the preference, for you will by so doing, gain a year in their formation. After being planted a year, these trees might be mistaken for those to which we have just given the first pruning, and receive with them the second pruning.

This second pruning consists in cutting off the *leader* at about 16 inches from its starting point, at A, (fig. 469). This pruning is intended in the same way to induce the development of branches disposed like the first ones. If you should leave this leader without shortening, only the buds at the top would start; there would result in consequence a considerable space between the base and the new branches.

You choose for the prolongation of the main stalk, a bud placed on the side oppo-

site to that of the preceding year. This condition should be complied with in each successive pruning, in order to keep the trunk of the tree in its entire length,—a vertical line.

The lateral branches are cut at the point indicated in our figure. You allow them as much length as possible, in order to favor their growth.

Sometimes this length should be such as to induce the development of all the buds situated on these branches.

If you leave them too long a certain number of the buds remain dormant, and this will produce a gap among the branches. If you cut them too short, the buds develop too vigorously to be readily transformed into fruit branches. The bud to which you cut on the lateral branches should be on the outside of the tree, in order that the branch which springs from it should follow naturally the oblique ascending line described by each branch starting from the trunk. If you choose the opposite bud on the inside, the shoot would have a vertical direction, and form an angle with the branch which bears it. There is no exception to this general rule, unless in cases where a branch is too close to its neighbors on the right or left. To cause it to deviate then from its direction, you chose as a terminal bud, a lateral bud placed on the side where you wish to direct the branch.

The remainder of the article will be found in our next number.—EDS.

LACKLAND'S GARDENER.

WITH his grounds laid out and his house in fairly habitable condition—according to the plans already laid before the reader—Lackland holds various consultations in regard to a proper gardener—consults, as in duty bound, first of all, Mrs. Lackland.

Mrs. Lackland wishes an industrious, sober man, who will keep the walks neat

and tidy, who knows enough of flowers not to hoe up any of her choice annuals, whose seeds she dots about in all directions, marking the places with fragments of twigs thrust in at all possible angles; she wishes moreover a good-natured man, who shall be willing to come and pot a flower for her at a moment's notice; one who will not forget

the sweet marjorum or the sage, and who will not allow the thyme to die in the winter.

He consults the city seedsmen, who refer him to a half-dozen of stout men who may be lounging upon the barrels in the front of their sales-room on almost any fine morning in April; but, on entering into parley with them, he is so confounded with their talk about ranges, and pits, and bottom heat, and pelargoniums and orchids, that he withdraws in disgust.

He consults the newspapers, where he finds a considerable array of "steady, capable men, willing to make themselves useful upon a gentleman's place"; he communicates with some two or three of the most promising advertisers, and arranges for an interview with them. Lackland has great faith, like almost all the men I ever met, in his study of physiognomy. About a man's temper or his honesty, he can hardly be mistaken, he thinks, if he can once set eyes upon him. He is therefore strongly disposed in favor of a stout, jolly faced Irishman who assures him he can grow as good "vigitable as enny man in" Ameriky."

"And flowers, Patrick (Patrick O'Donohue is his name), you could take care of the flowers?"

"Oh, flowers, and begorra, yis, sir—roses, pinks, v'lets—roses—whatever you wish, sir."

"And, Patrick, you could harness a horse sometimes if it were necessary."

"Horses, and indade, yis, sir; ye may jist say, I'm at home in a stable, sir."

"And the poultry, Patrick, you could look after the poultry, couldn't you?"

"And indade, sir, that's what I can; there's niver a man in the country can make hens lay as I can make 'em lay."

In short, Lackland bargains with Patrick, and reports him at the home-quarters "a perfect jewel of a man."

The best of implements are provided, and a great stock of garden seeds—the choice of the latter being determined on after

family consultation, in which all the vegetables ever heard of by either party to the counsel have been added to the list. If a man have a garden why not enjoy all that a garden can produce? Egg plants, and okra, and globe artichokes, and salsify, and white Naples radishes, and Brussels sprouts. The seeds of all these are handed over to the willing Patrick, who, as Mrs. Lackland impressively enumerates the different labels (Patrick not being competent to reading of fine print, as he freely confesses), repeats after her, "Naples radish, yis, m'am; artichokes, yis, m'am; okra, y'is, m'am."

Lackland provides frames and glass for the early salads he covets so much, and Patrick, with the fresh sweepings of the stables, has presently a bed all a-steam. At the mere sight of it the Lacklands regale themselves with thoughts of crisp radishes, and the mammoth purple fruit of the egg-plants. The seeds are all put in—early cabbage, cauliflower, peppers, radishes—under the same frame by the judicious O'Donohue. The cabbages and the radishes come forward with a jump. Their expedition forms a pleasant theme for the physiological meditation of Lackland. He is delighted with the stable manure, with the cabbage seed, and with the O'Donohue. He is inclined to think disrespectfully of the seed of peppers and of egg-plants in the comparison. But the bland O'Donohue says, "We must give 'em a little more hate."

And after some three or four days, Lackland is stupified, on one of his visits to his hot bed, to find all his fine radishes and cabbages fairly wilted away; there is nothing left of them but a few sun-blackened stumps; the peppers and egg-plants show no signs of germination.

"What does all this mean?" says Lackland; "the cabbages are dead, Patrick."

"Yis, sir—it's the hate, sir. The sun is very strong here, sir; we must give 'em a little more air, sir."

And they get the air—get the air (by a little forgetfulness on the part of Patrick) night as well as day; the peppers and egg-

plants, after a fortnight more of expectation, do not appear.

"How's this, Patrick? no start yet."

"And are ye sure the seed's good, sir?"

"It's all Thorburn's seed."

"Then, of course, it *ought* to be good, sir; but, ye see, there's a dale o' chaterly now-a-days, sir."

In short, Lackland's man Patrick is a good-natured blunder-head, who knows no better than to submit his young cauliflowers, and peppers, to the same atmospheric conditions in the forcing frame. The result is that Lackland buys his first salads in the market, and his first peas in the market, and his first beets in the market. All these creep along very slowly under Patrick's supervision, and the onion seed is fairly past hope, being buried too deep for the sun to have any influence upon its germinating properties.

"But how is this," says the long-suffering Lackland, at last, "our neighbors are all before us, Patrick?"

"Well, sir, it's me opinion that the land is a bit cowl'd, sir. Wait till July, sir, and you'll see vigitable."

And Patrick grubs away with a great deal of misdirected energy—slicing off, in the heat of his endeavor, two or three of Mrs. Lackland's choicest rocket larkspurs; whereupon that lady comes down upon him with some zeal.

"Larkspur! and that's a larkspur, is it, m'am (scratching his head reflectingly)? and, begorra, I niver once thought 'twas a larkspur. Pity, pity; and so it was, indade, a larkspur? Well, well, but it's lucky it wa'n't a rose-bush, m'am."

And yet the good-natured blunder-head in the shape of a gardener is far more endurable, to one thoroughly interested in country life, than the surly fellow who, if he gives you early vegetables, resents a suggestion, and who will take a pride in making any particular scheme of the proprietor miscarry by a studied neglect of its details.

Upon the whole, I should lay down as

sound advice for any one who, like Lackland, is beginning to establish for himself a home in the country that shall be completely enjoyable, the following rules with respect to the pursuit and employment of a gardener.

First, if your notion of country enjoyment is limited by thought of a good place where you may lie down under the trees, and frolic with your children, or smoke a pipe under your vine or clambering rose-tree at evening—find a gardener who is thoroughly taught, and who can place upon your table every day the freshest and crispest of the vegetables and fruits of the season, leaving you no care, but the care of bills for superphosphates and trenching. If you stroll into his domain of the garden, take your walking-stick or your pipe there, if you choose—but never a hoe or a pruning knife. Joke with him, if you like, but never advise him. Take measure of his fitness by the fruits he puts upon your table, the order of your grounds, and the total of your bills. If these are satisfactory—keep him: if not, discharge him, as you would a lawyer who managed your case badly, or a doctor who bled or purged you to a sad state of depletion.

If, on the other hand, in establishing a country home, you have a wish to identify yourself with its growth into fertility and comeliness, in such sort that you may feel that every growing shrub is a little companion for you and yours—every vine a friend—every patch of herbs, of vegetables, or of flowers, an aid to the common weal and pleasures of home, in which you take, and will never cease to take, a personal interest and pride—if all this be true, and you have as good as three hours a day to devote to personal superintendence—then, by all means, forswear all gardeners who come to you with great recommendations of their proficiency. However just these may be, all their accomplishments, ten to one, will be only a grievance to you. It is far better, if you be really in earnest to taste ruralities to the full, to find some

honest, industrious fellow—not unwilling to be taught—who will lend a cheerful hand to your efforts to work out the problem of life in the country for yourself.

You will blunder; but in such event you will enjoy the blunders. You will burn your young cabbages, but you will know better another year. Your first grafts will fail, but you will find out why they fail. You will put too much guano to your sweet corn, but you will have a pungent agricultural fact made clear to you. You will leave your turnips and beets standing too thickly in the rows; but you will learn by the best of teaching—never to do so again. You will buy all manner of fertilizing nostrums,—and of this it may require a year or two to cure you. You will believe in every new grape, or strawberry,—and of this it may require many years to cure you. You will put faith, at the first, in all the horticultural advices you find in the newspapers,—and of this you will speedily be cured.

In short, whoever is serious about this matter of taking a home in the country (if his rural taste be a native sentiment, and not a whim), should abjure the presence of a surly master in the shape of a gardener, who can tell him how the Duke of Buccleugh (or any other) managed such matters.

God manages all of nature's growth and bloom in such way, that every earnest man with an observant eye can so far trace the laws of His Providence, as to insure to himself a harvest of fruit, or grain, or flowers. And whatever errors may be made are only so many instructors, to teach, and to quicken love by their lesson.

Let us not then despair of our friend Lackland, though his cabbages are burnt and his beets are behind the time. I shall visit him again, and trust that I may find his verbenas and lilies in bloom, though his larkspurs have been cut down.

Edgewood, June 2d, 1865.

HINTS TO ORNAMENTAL PLANTERS.

BY. A. D. G.

IF one may judge from his own experience, more is often learned by careful attention to "hints" in gardening than from elaborate treatises on the subject. The hint is generally the result of experience or observation, and suggests something really useful. Many who read the ponderous octavos of Loudon, and Mackintosh and Downing, get only general principles from their study; but when they mingle with intelligent gardeners, or visit fine country places, they get ideas which can at once be reduced to practice. The hints to beginners, which the pages of the *HORTICULTURIST* have so often presented to their readers, constitute some of its most valuable matter.

—It is a mistaken notion that a lawn should be *large*. If of great extent, it lacks

simplicity and home-likeness. It should be a cozy nook rather than a broad, open expanse. A large extent of surface is expensive to make and keep, and can hardly be maintained in that perfect order which is one of the great charms of a lawn. It should be large enough to show a few fine trees to advantage—their masses of foliage floating in the air, and their shadows stretching across the velvet turf; large enough for a wavy belt of shrubs on its borders, and running out, here and there, into the grass; large enough for children to romp and roll over it; but not large enough for a grove of trees to be planted upon it, nor for the review of a regiment of soldiers. It should be just large enough for the owner to keep it entirely free from weeds, its grass

smoothly shaven and rolled, and its walks and flower-beds (if it contain them) in complete order.

If the planter have a large surface at command, which he wishes to devote to grass, let him convert it into two lawns of moderate size. These should be partially screened from each other by rambling lines of shrubs and low trees. Walks may be laid through this shrubbery to connect the two scenes. While there should be nothing in the one lawn designedly to suggest the other, yet no harm will be done if the bays and recesses in the surrounding foliage, and occasional glimpses of smooth turf beyond, suggest to the visitor that the domain is of large extent, and that the sources of his gratification will not soon be exhausted. Thus variety of scene will be secured, curiosity be stimulated and pleasantly rewarded. That the two lawns should differ in size, outline and arrangement need hardly be added.

— The *expression* of a lawn is a matter of some consequence. Beginners are apt to give it a look of smartness. They dot it over with new-fangled trees, or crowd it with vases and statuary, or arbors, rustic seats and rock-work, or they throw it into jolting terraces, or cut it up into flower-beds in arabesque patterns. We have in our mind's eye a lawn of moderate dimensions in which there are six cast iron vases, two lions, four dogs, four female figures representing the Seasons, besides several other works in terra-cotta. This is the classical run mad. On the same street is another lawn, much smaller, in which a great number of the new weeping trees are huddled together. This is nature made awry, and the distortion makes the beholder uncomfortable. A single specimen of these oddities may sometimes be set on the side of a lawn, for variety, and just to show what nature and art can do "on a bender," but more than one is too many.

The best expression of a lawn is that of repose; not, indeed, the repose of an unkempt meadow, but of grounds over which

the hand of taste presides, and easily fashions into beauty. There should be nothing to suggest the thought of labor and cost in the making and keeping of the lawn, or of desire to attract attention and make a display. It should suggest ideas of comfort, of rest from care and toil, of freedom from excitement and hurry, of self-contained enjoyment. With this expression, the oddly shaped trees, the superabundance of statuary and the glitter of flower beds somewhat conflict. A vase or figure rightly set produces a fine effect. If flowers are admitted into the lawn, it should be sparingly, and they should be constant bloomers. The flower-garden proper should be disposed in a scene by itself, somewhat secluded, and of large or small extent, according to the taste of the proprietor.

— The *outlook* of a lawn should be well considered; for, however pleasant one's own grounds may be, their charm will be heightened by glimpses of the world beyond. But beautiful scenery—hill, wood, stream, and purple mountains—becomes still more beautiful if it bears some marks of relation to man. The landscape artist, while giving us a view of nature in her wildness, knows that he adds a higher expression to his canvass if he gives it also some token of human life, such as the smoke curling up from a distant cottage, or a sail upon a sheet of water, a church spire rising above the woods.

Let the rural improver bear this in mind. While "planting out" offensive objects, he should be careful not to hide all the living scenes in his landscape. So, too, if one builds his house upon a wooded site, where the improvements are to be made as much with the axe as the spade, let him open vistas so as to bring in those objects which address the heart's finer sentiments, and so associate nature with humanity.

And here let us digress a little to say we see one reason why the purchaser of a "finished" place often feels little interest in it at first, but generally finds that interest increasing from year to year. He must needs *do* something to the place, must think

about it, dream about it, work upon it, alter it, add to it, and in various ways mingle his own personality with it, before his affections will twine about it, and he will really love it as his own home. This brings in the human element, adds fragrance to the flowers, grace and majesty to the trees, and sweetness to the very soil.

— Finally—if the writer of these “hints” is not assuming too much authority—let him caution small planters against *attempting too much*. Landscape gardening in a door-yard often verges upon the ridiculous. The proprietor, having read the standard authors, or visited a few large country residences, is seized with the rural fever, and determines to try his hand at improving his own place. He forthwith draws up a plan, with its winding walks and roads, its summer-houses, pines, oaks, magnolias, flower-patches, and what not. Large packages of trees and shrubs and vines are ordered from the nursery, and groups and masses and screens are set out all in a grand way. The work looks very fine to the owner; but to any discerning eye that stops to forecast the future, the little plat looks crowded and overburdened before it is half planted. A few years roll by, and how does the place look to everybody? It is one great confused mass of foliage, the trees overgrowing each other, and killing out the grass and shrubs beneath. Even the planter himself is dissatisfied, and wishes he had never meddled with landscape gardening.

The obvious lesson from cases like this is that in small places only a few trees should be planted. These should be set along the

boundaries, near the gates, and at wide intervals over the surface. Calculate their spread for twenty years or more to come, and plant accordingly. It is often said, we are aware, that trees may be set close together at first for immediate effect, with the design of removing a portion of them when they become crowded. This is all very well if that intention is faithfully carried out; but in most cases it is not. The owner dislikes to cut down the trees which he has planted, or he neglects to do so until they have grown up tall and gaunt, like those of a forest. If a man plants trees close together, for immediate effect, intending to take out a part of them in a few years, the only safe way is for him to bind himself to his neighbors to forfeit a large sum of money or to be sent to the Insane Asylum in case he neglects to do it!

In place of numerous large trees in small grounds, how much better to plant, in part, with low trees and shrubs. The number and variety of these last is greater than many suppose; and hardly less artistic skill can be shown in their arrangement than in the disposition of trees. The effect, too, in its way, is equally pleasing. They can be set as single specimens on the lawn, or be grouped in masses of varied outline, height and color.

But whatever be the mode adopted of planting small grounds, let not the work be overdone. A smooth carpet of grass, a few choice trees and shrubs, a knot or two of flowers, and all in high keeping, will commend themselves to every eye.

COOL TREATMENT OF ORCHIDS.

BY EDWARD S. RAND, JR.

WITHIN the last two years an entire change in the culture of orchids has been advocated, and in some instances carried into practice in England, and with no inconsiderable degree of success.

This new mode of culture, known as the

“cool treatment,” is directly opposed to the practice of the last thirty years, and to all the theories of orchid culture. The proposition on which it is based is that orchid houses have always been kept too hot, and the plants grown on a high pressure sys-

tem; that the maintenance of such a temperature is not only very expensive, as all experience has shown, but positively injurious to the plant, causing an exhaustion of the vital functions. The conclusion drawn is that any one having a heated grapery where the temperature is never allowed to fall below forty degrees Fahrenheit, may grow most of the orchids now in cultivation in great perfection, and withal ripen his grapes quite as well as when the house was exclusively devoted to them.

Now, if this can be done, and it has in some cases been successfully accomplished, the culture of orchids becomes easy, and much of the expense, which has deterred so many from attempting it is saved. The experience of florists and horticulturists hitherto has shown that it is impossible to grow grapes and flowers successfully in the same house; in other words, a grapery and green-house cannot be combined. But if our forcing houses can be adorned with the gorgeous, fragrant and curious flowers of orchids (than which there is nothing more beautiful and remarkable in the floral world), the discovery is one of the greatest value to the florist and amateur. We propose to condense from the latest English publications the experience of those who have put the new theory into practice, feeling that if further trial proves the discovery to be of general adaptation, its value can hardly be estimated. But first let us state that, while experience has shown that this mode of culture succeeds with most orchids, it does not suit the nature of those species which come from the hot damp jungles of the Eastern continent; but is more especially adapted to South American and Mexican species, particularly those which are natives of the great Andean range, where in fact the largest part of South American orchids occur.

We learn from Humboldt that although orchids are scattered throughout every part of the torrid zone, from the level of the sea to the height of ten or eleven thousand feet, yet it must be admitted that in the

number of species, the coloring of their blossoms, delicious fragrance, rich foliage, and profusion of bloom, none can be compared to those that inhabit the Andes of Mexico, New Granada, Quito and Peru, where the shade is moist and the breezes mild, and the mean temperature of the year, at an elevation of between forty-eight thousand and sixty-six thousand feet, is from sixty-four to sixty-nine degrees Fahrenheit. In fact, these most beautiful of plants, like those most beautiful of birds, the humming-birds, seem to cling with a marvellous partiality to the vast Andean chain which stretches from the frontiers of Mexico to the confines of Peru. These mountains are, geologically speaking, of recent date; the orchids therefore that inhabit them must likewise be comparatively recent: indeed, no fossil orchid has ever been discovered; although ferns, with which in these days orchids are invariably associated, have been found in countless myriads in the palæozoic strata.

About ten years since, continued failure in the cultivation of many New Grenadian and Peruvian orchids led to the suspicion that both the theory and practice of culture were fundamentally wrong; and experiments were tried in varying the temperature, which met with partial success. The fault still was that too much heat was given, and often too little moisture; consequently the finest species dwindled day by day, flowering poorly, if at all, and finally were lost to cultivation.

It was on the collection of Linden that the first decided move was made towards cool treatment, and the first decided triumph achieved; and there it was that the rare and beautiful *Odontoglossums* figured in "*Pescatoria*" flowered for the first time in cultivation.

In growing plants under the "cool treatment," the house should be low and small, and should be either a "lean to" facing the north, or a well-shaded "span roof." The temperature should be as equable as circumstances will permit, that is to say, during

the day time in winter it should not fall below sixty degrees, while during the day time in summer the less it rises above seventy degrees the better.

In the night, of course, the temperature will fall considerably, and even if it sink below fifty degrees no harm will be done; many of the finest *Odontoglossums* thriving at a minimum temperature of thirty-five degrees.

Experience has shown that the East Indian house, or a temperature averaging from a winter minimum of sixty degrees to a summer maximum of ninety-five degrees, is not the temperature suited to the well-being of a single known example of *Odontoglossum* or *Lycaste*. A *Cattleya* house, ranging from a minimum of fifty-five degrees to a maximum of eighty-five degrees, is not exactly suited to either of the genera named, though such species as *Odontoglossum grande*, *Bictonense* and *Nebulosum* will live and remain tolerably healthy under such a temperature, if accompanied with a proper degree of moisture. In fact, for such a collection and for such rare and valuable plants as *Epidendrum vitellinum*, *Lycastes* of all species, *Lelia cinnabarrina*, *anceps* and *flava*, *Cattleya Skinnerii* and *citrina*, *Trichopilia*s and *Anguloas* of all sorts, and many plants of kindred nature, a minimum of forty-three degrees and a maximum of seventy to seventy-five degrees during the heat of summer are of all temperatures best suited to the plants. Lower than forty degrees (except in a collection composed entirely of *Odontoglossum Pescatorei*, *cordatum*, *membranaceum*, *Ehrenbergii*, and *Cervantesii*, which will bear thirty-five degrees), it had better never be, even in very cold weather; and some care must be taken to keep the plants during that time in a medium state of moisture.

Higher than fifty degrees at night during the dead of winter is not a good practice, although the temperature may be allowed to rise thus high during the day before giving air. Plenty of fresh air is of great importance during summer and autumn to consolidate the pseudo-bulbs and encourage free flowering.

It must be borne in mind and carried out in practice that in order to promote the health of the plants, the temperature in doors must rise and fall with the out-door air. A good proportion is from five to eight degrees during the night, and from eight to twelve degrees during the day.

The plants themselves may be grown either on blocks or in pots, the *Odontoglossums* always preferring the latter, and *Epidendrums* the former. The general directions for potting given in a former article apply perfectly to these plants. As a general rule, they all delight to grow in good rich fibry matter, such as is to be had in swamps and peat meadows, where vegetable fibre largely predominates. As many of the particles of earthy matter as can be easily got rid of should be separated from the turves by beating. If there is any inclination to soddenness or a disposition of any kind to obstruct through aeration, a good quantity of sphagnum moss should be introduced, which counteracts any bad effects.

There is nothing to be gained by impoverishing the semi-terrestrial species, and often cow or horse droppings well dried may be added to the potting material with beneficial results.

No *Odontoglossum*, *Lycaste*, *Lelia*, or *Trichopilea*, as a general rule, should be allowed to get dry at the roots.

Nothing cripples their power of action so much as drought, and it sometimes requires months or even years for a plant to recover from a single "drying off." It must be borne in mind that many of these plants have watery bulbs, and make several growths in a year (such are *Odontoglossum Pescatorei*, *crispum*, *odoratum* and *gloriosum*); and if the bulbs are once allowed to dry up and shrivel, they seldom recover their former vigor.

Occasionally it is necessary, in order to induce floral development, to check the luxuriance of particular species which show little disposition to flower annually unless thus wrought upon by the hands of the cultivator; but there is a particular time when such treatment is requisite (and each

plant must make its own rule), and its duration must not be extended for too long a period.

During the growing season no cessation of vigor must be encouraged; ample supplies of water, both at the root and in the atmosphere, are what the nature of the plant demands. If the potting material be of the right kind, so porous as to allow air to pass freely, and so fibrous as not to become sodden, water may be given once a day without injury.

To promote a moist atmosphere, the shelves of the orchid house may be strewn with wet moss, from which the evaporation is highly beneficial.

Insects should be kept under by the means given in former articles. We must, however, remember that the fumes of tobacco are injurious to many of the *Odontoglossums* and other cool orchids, causing them to shed their leaves; and, as a general rule, a miscellaneous collection of orchids requires to be fumigated with great care and judgment.

We have said that experience has latterly tended to show that orchids associate admirably with vines, and that they may be successfully flowered and a crop of grapes be grown in the same house. If we consider the range of temperature we have given above for the regulation of a cool orchid house, we see it accords well with that required in a forcing grapery.

Experiments in England have shown that there are but few orchids which cannot be cultivated under vines, and that many of the East-Indian species, which have always been held in the greatest heat, will do well under this *régime*.

There are, however, some species, mostly found in the genera *Vanda*, *Ærides* and *Phalænopsis*, which cannot be thus grown, though these in summer will succeed in a grapery. This experiment is certainly worth trying in this country. Its success is, of course, questionable, for the intensity and force of our summer sun is so much greater than in England, that what may be a suc-

cess in one country may prove a disastrous failure in the other; and the shade necessary for the plants might be too great for the grapes.

There is another advantage resulting from the discovery of the cool treatment system. It is not impracticable to grow orchids in cities where only a very small space can be given: the house must be small, and the temperature need not be high.

Both these conditions could be realized with but little trouble and expense. An attic room or a shady unsightly yard could, with a very slight outlay, be converted into a miniature orchid house, and the magnificent Andean orchids, together with the hardier ferns and lycopods, grown with very little trouble.

In London and other European cities, this has been successfully done, and there is no reason why success should not reward experiments of this kind in our own large cities.

Some orchids have been successfully grown in the house as parlor plants, and *Odontoglossum grande* has even been bloomed in England in the open air; but we are not enthusiastic in regard to "parlor gardening" with orchids, the result of all experiments showing that the only plant very successfully grown in the house was *Lycaste Skinnerii*, which roots more freely in peat than any other orchid.

It only remains to give a list of those orchids which experience has shown thrive remarkably in a cool house.

First, all the *ODONTOGLOSSUMS* from New Granada for the coolest house, those from Mexico and Guatemala thriving with a little more heat, but doing well in a house where the temperature is regulated as we have before prescribed.

The Indian *CÆLOGYNES*, particularly the deciduous tribe of *PLEIONES*, which need plenty of water while growing, and which when well grown flower as freely as a pot of crocus.

LYCASTES in all the species, but particularly *Skinnerii*, *cruenta* and *aromatica*.

MAXILLARIA venusta.

EPIDENDRUM *aurantiacum*, *vitellinum*, *macrochilum* and *cinnabarrinum*.

ANGULOA *Clowesii*, *Ruckerii* and *uniflora*.

BARKERIA *Skinnerii* and *spectabilis*.

DENDROBIUM *speciosum*.

PHAJUS *albus* and *grandifolius*.

CYPRIPIEDUM *caudatum*, and most other species.

UROPEDIUM *Lindenii*.

DISA *grandiflora*.

There are many other orchids which grow and flower better with a moderate degree of heat, and which do well in a cool house during the greater part of the year: such are *Lelias*, *Sophronitis* and many others.

This system of culture is as yet in its infancy, and we may reasonably hope that further experiments will prove that orchid culture, now confined to a few, may before many years be within reach of the masses, and the rich flowers of the *Lelias*, *Odontoglossums* and *Cattleyas*, the fragrant blossoms of the *Ærides*, *Dendrobiums* and *Stanhopeas*, and the curious blooms of the *Catesetums* and *Coryanthes*, be as well known at our horticultural exhibitions as the ever favorite roses, lilies and violets.

Glen Ridge, June, 1865.

CULTURE OF THE ROSE.—CONTINUED.

BY F. PARKMAN.

Climbing and Pillar Roses.

WHEN roses are trained to cover walls, trellises, arches or pillars, the main stems are encouraged to a strong growth. These form the permanent wood, while the side-shoots, more or less pruned back, furnish the flowers. For arbors, walls, or very tall pillars, the strongest growers are most suitable, such as the *Prairie*, *Boursault* and *Ayrshire* roses. Enrich the soil strongly, and dig deep and widely. Choose a healthy young rose, and in planting, cut off all the stems close to the earth. During the season it will make a number of strong young shoots. In the following spring cut out half of them, leaving the strongest, which are to be secured against the wall, or over the arbor, diverging like a fan, or otherwise, as fancy may suggest. The subsequent pruning is designed chiefly to regulate the growth of the rose, encouraging the progress of the long leading shoots until they have reached the required height, and removing side-shoots where they are too thick. Where a vacant space occurs a strong neighboring shoot may be pruned back in spring to a single eye. This will

stimulate it to a vigorous growth, producing a stem which will serve to fill the gap. Of the young shoots, which, more or less, will rise every season from the root, the greater part should be cut away, reserving two or three to take the place of the old original stems, when these become weak by age. When these climbing roses are used for pillars, they may either be trained vertically, or wound in a spiral form around the supporting column.

Roses of more moderate growth are often trained to poles or small pillars, from six to twelve feet high. Some of the Hybrid China roses are, as before mentioned, well adapted to this use, and even some of the most vigorous Moss roses, such as *Princess Adelaide*, may be so trained. Where a pole is used two stems are sufficient. These should be examined and cut back to the first strong and plump bud, removing the weaker buds always found towards the extremity of a stem. Then let the stems so pruned lie flat on the earth till the buds break into leaf, after which they are to be tied to the pole. If they were tied up im-

mediately, the sap, obeying its natural tendency, would flow upward, expanding the highest bud, and leaving many of those below dormant, so that a portion of the stem would be bare. (The same course of proceeding may be followed with equal advantage in the case of wall and trellis roses). The highest bud now throws up a strong leading shoot, while the stem below becomes furnished with an abundance of small side-shoots. In the following spring the leading shoot is to be pruned back to the first strong bud, and the treatment of the previous year repeated. By pursuing this process, the pillar may, in the course of two or three years be enveloped from the ground to the summit with a mass of leaves and blossoms.

These, and all other rose pruning operations are, in the northern States, best effected in March, or the end of February, since roses pruned in Autumn are apt to be severely injured and sometimes killed by the severity of our winters.

SUBSEQUENT CULTURE.

Nothing is more beneficial to roses than a frequent digging and stirring of the soil around them. The surface should never be allowed to become hard, but should be kept light and porous by hoeing or forking several times in the course of the season. A yearly application of manure will be of great advantage. It may be applied in the Autumn or in the Spring, and forked in around the plants. Cultivators who wish to obtain the finest possible blooms, sometimes apply liquid manure early in the Summer, immediately after the flower-buds are formed. This penetrates at once to the roots and takes immediate effect on the growing bud.

AN EXPERIMENT IN ROSE GROWING.

The amateur may perhaps draw some useful hints from an experiment made by the writer in cultivating roses, with a view to obtaining the best possible individual flowers. A piece of land about sixty feet long by forty wide was "trenched"

throughout, to the depth of two feet and a half, and enriched with three layers of manure. The first was placed at eighteen inches from the surface; the second at about nine inches, and the third was spread on the surface itself, and afterwards dug in. The virgin soil was a dense yellow loam of considerable depth; and by the operation of "trenching," it was thoroughly mixed and incorporated with the black surface soil. Being too stiff and heavy, a large quantity of sandy road scrapings was laid on with the surface-dressing of manure.—When the ground was prepared the roses were planted in rows. They consisted of Hardy June, Moss, Hybrid Perpetual, Bourbon, and a few of the more hardy Noisette roses. They were planted early in Spring, and cut back at the same time close to the ground. Many of the Perpetuals and Bourbons flowered the first season, and all grew with a remarkable vigor. In November, just before the ground froze, a spademan, working backward, midway between the rows, dug a trench of the depth and width of his spade, throwing the earth in a ridge upon the roots of the roses as he proceeded. This answered a double purpose. The ridge of earth protected the roots and several inches of the stems, while the trench acted as a drain. In the Spring, the earth of the ridge was drawn back into the trench with a hoe, and the roses pruned with great severity, some of the weak-growing Perpetuals and Mosses being cut to within two inches of the earth, and all the weak and sickly stems removed altogether. The whole ground was then forked over. The bloom was abundant and the flowers of uncommon size and symmetry. Had the pruning been less severe the mass of bloom would have been greater, but the individual flowers by no means of so good quality.

STANDARD ROSES.

Of budded roses we shall speak hereafter, in treating of propagation. There is one kind, however, which it will be well to notice here. In England and on the Continent it is a common practice to bud roses

on tall stems or standards of the Dog Rose, or other strong stock, sometimes at a height of five feet or more from the ground. The head of bloom thus produced has a very striking effect, especially when the budded rose is of a variety with long slender shoots, adapted to form what is called a "weeper."

In France, standard roses are frequently planted near together in circular or oval beds, the tallest stems being in the centre, and the rest diminishing in regular gradation to the edge of the bed which is surrounded with dwarf roses. Thus a mound or hill of bloom is produced with a very striking and beautiful effect.

Unfortunately, the severe cold and sudden changes of the northern States, and especially of New England, are very unfavorable to standard roses. The hot sun scorches and dries the tall bare stem, and the sharp cold of winter frequently kills, and in almost every case greatly injures the budded rose at the top. It is only by using great and very troublesome precaution that standards can here be kept in a thriving condition. This may be done most effectually by cutting or loosening the roots on one side, laying the rose flat on the ground and covering it during winter under a ridge of earth. Some protection of the stem from the hot sun of July and August can hardly be dispensed with.

With regard to the mounds of standard roses first mentioned, it is scarcely worth while to attempt them here; but a very good substitute is within our reach. By choosing roses with a view to their different degrees of vigor, planting the tall and robust kinds in the middle, and those of more moderate growth in regular gradation around them, we may imitate the French mounds without the necessity of employing standards. Of course it will require time and also judicious pruning to perfect such a bed of roses; but when this is done it will be both a beautiful and permanent ornament of the lawn or garden.

ENEMIES OF THE ROSE.

A good soil, a good situation, free air and

full sun, joined with good manuring, good pruning and good subsequent culture will prevent more diseases than the most skilful practioner would ever be able to cure.— There are certain diseases, however, to which roses under the best circumstances are more or less liable. Of these the most common, and perhaps the worst is the mildew. It consists in the formation on the leaves and stems of a sort of minute fungus, sometimes presenting the appearance of a white frost. Though often thought to be the result of dampness, it frequently appears in the driest weather. Many of the Bourbon roses, and those of the Hybrid Perpetuals, nearest akin to the Bourbons, are peculiarly liable to it. In the greenhouse the best remedy is sulphur, melted and evaporated at a heat not high enough to cause it to burn. In the open air the flour of sulphur may be sifted over the diseased plants.

The worst enemies of the rose belong to the insect world. Of these there are four, which in this part of the country cause far more mischief than all the rest combined. The first is the aphid or green fly; the second is the rose-slug or larva of the saw-fly; the third is the leaf-hopper, sometimes called the thrip, and fourth is the small beetle, popularly called the rose-bug. The first three are vulnerable, and can be got rid of by using the right means. The slug is a small green semi-transparent grub, which appears on the leaves of the rose about the middle of June, eats away their vital part, and leaves nothing but a brown skeleton, till at length the whole bush looks as if burned. The aphid clings to the ends of young shoots and sucks out their sap. It is prolific beyond belief, and a single one will soon increase to thousands. Both are quickly killed by a solution of whale-oil, soap, or a strong decoction of tobacco, which should be applied with a syringe in the morning or evening, as the application of any liquid to the leaves of a plant under the hot sun is always injurious. The same remedy will kill the leaf-hopper,

which being much more agile than the others, is best assailed on a cold day when its activity is to some degree chilled out of it. Both sides of the leaves should be syringed, and the plant thoroughly saturated with the soap or tobacco water. Two thorough and well-timed applications will suffice to destroy the years' crop of slugs.

The rose-bug is endowed with a constitution which defies tobacco and soap, and

though innumerable remedies have been proposed, we know no better plan than to pick them off the bushes by hand, or, watching a time when they are chilled with cold to shake them off upon a cloth laid on the ground beneath. In either case sure work should be made of them by scalding or crushing them to death. Fortunately they are not very troublesome in most localities.

NOTES ON THE JUNE NUMBER.

CURIOSITIES OF HORTICULTURE.

A good record, but I fear giving too favorable a view of the profits of fruit growing.

We must recollect that all have not Philadelphia or New York markets, in which to sell; and again, we must recollect that prices of fruits for the past two years and now, have like many other things, felt the influence of an expansive currency.

Grapes, to command a dollar per pound, must be grown with no little expense of time, talent and outlay of structure.—Pears, to command a shilling a piece even in New York market, must have the inferior ones carefully thinned out from the tree, &c.; but we may safely conclude that whenever, and by whom, and in what manner fruit growing has been made profitable, the same may be continued, and with a reasonable probability of an increase. In many sections, our Delaware, Lydia, and Catawba grapes can be grown at a net profit of over two hundred dollars per acre, at six cents per pound, while peaches, apples and pears will pay a like sum when the trees are in full maturity.

FLOWERS IN MASSES.

A capital article, but the instruction for preparation of a flower bed, etc., is perhaps a little of the old grape school order, *i. e.* "an excavation of three to four feet deep."

The writer has planted some twenty years, and finds on clay soil especially, that beds dug and prepared below the depth of the surrounding soil, do no better, if quite as well, as when kept a little above.

The taking up, digging, and replanting of all roses, etc., should be done every year, and the forking over of bulb ground, we prefer to do in the fall rather than the spring, then cover with a light mulch, and in spring rake off. Both ways are good.

GRAPE CUTTINGS FROM HISTORY.

I hope the writer will not be disappointed in his new and *superior* grape, but I beg of him not to puff it and have an auction sale until it has been fruited in more than one locality.

The introducer of a new fruit should strive at something more than the making the most money of it. It might have been added in "Curiosities of Horticulture," that no one who has ever introduced a fruit, showing as a leading object gain, has kept a reputation for character as a Horticulturist. It is the poorest of all professions to dissemble in.

By the by, let us ask Mr. Husmann to tell us a little about Rulander and some other of the grapes grown and little known. He knows all about them, and it will not do to let his modesty keep that knowledge entirely to himself.

GREEN-HOUSE FERNS.

Don't know much about them, but I do know some, and want to know more about our hardy ferns; for in fitting up rockwork, there is no plant that comes in more beautifully than they when a right exposure can be had.

HINTS AND QUERIES.

"Trouble, trouble, boil and bubble."—Well, my friend, "never say die." Try transplanting your English gooseberries every fall, digging the soil over, and we think you will get fair fruit. By so doing we have succeeded for years; yet one swallow does not make a summer, nor one man's practice make correct principles in Horticulture.

Others may think differently, but we should have no confidence in Kilmarnock willow enduring the winters where the common weeping failed, nor have we any confidence that Catalpa will endure any very extreme of temperature in winter, even if planted in sand.

FOREIGN TRAVEL.

He who loves to look on a beautiful beach, may see as elegant specimens as ever were grown, out of Cincinnati on one of the cross roads leading to Clifton; and for Spanish and French Marron Chestnuts, perhaps no better specimens are found than in New Jersey, at Burlington, &c.

As a general thing, we do not study the

beautiful in tree. Most of us forget that we have two eyes and only one mouth, and so forgetting, too often plant a fruit tree where an Elm, Beech, etc., would, in a few years, contribute most to our actual enjoyment and comfort.

BUCKTHORN VS. HONEY LOCUST.

Let me add, that twenty-one years since, I planted a Honey Locust hedge, and it is yet in existence. It has been plashed and trimmed; is now about seven feet high; is a good barrier, but entirely devoid of beauty, as compared with one of Buckthorn planted some six years afterwards.

OUR METHOD.

So much is being now said of Grape culture, that it is perhaps better not to remark on "our method." I will only ask if *experience* has taught that *early in June* removing the secondary shoots from the double bud, and a judicious *pinching*, &c., is practically productive of the best effects.

FORESTS AND FOREST TREES.

Like all of the C. N. B. articles well considered, and as he says, one example in a neighborhood will, in a few years induce extensive copyings.

All cannot or will not read the article, but those who have should see to it, that its seed be sown on good ground, and when planting season again comes let its growth be apparent.

REUBEN.

UPON RAISING HYBRID AND SEEDLING GRAPES.

BY GEO. W. CAMPBELL, DELAWARE, OHIO.

THE remarks of Mr. Merrick, in the May number of the HORTICULTURIST, induce me to offer a few items of my experience, as I have been experimenting in the way of "raising seedlings" for some seven or eight years past. I have not raised a very large number, for I have never planted large quantities of seed promiscuously and indiscriminately. The seed that I have planted

have either been selected from the finest specimens of the best varieties of grapes, or from those which have been hybridized or crossed with varieties having qualities which I desired to perpetuate. When I commenced these operations, the Delaware and Logan grapes were regarded as among the most valuable, and I planted seed from the Delaware, and made an artificial cross

between the two, using the Logan as the pistillate, and the Delaware as the staminate parent. I placed the seed in small vials, as they were saved, keeping each kind labeled and separate. On the approach of winter, I put the seed into clean, sifted sand in small pots, and buried it a few inches under the ground, where it would be subjected to the action of frost. About the first of March, seed thus treated were taken up and planted in moderately rich compost in thumb pots; one seed in a pot, and placed upon a propagating bed. About two-thirds would vegetate within four weeks. Some earlier, but those that came up later were usually weak and imperfect, and apparently of no use. The plants from simple seedlings usually have a strong resemblance in foliage and habit of growth to the parent. Those from hybrids and crosses sometimes resemble one, and sometimes the other parent; and again exhibit very distinctly mixed characteristics of both. I will here remark that I use the term "cross" to indicate a seedling from the union of two native varieties, and "hybrid," when from a foreign and native. The main object which I have had in view in my experiments, was if possible to unite the qualities of the finest foreign varieties with the hardiness of our best natives. Secondly, improvement of native varieties. To this end I made crosses between Delaware and Logan, Catawba and Logan, Delaware and Concord, Delaware and Union Village; also hybrids between Black Portugal and Delaware, Black Hamburg and Delaware, Grizzly Frontignan and Delaware, Rogers' Hybrid, No. 4 and Delaware, White Frontignan and Taylor, Chasselas Fontainebleau and Taylor, Chasselas Musque and Concord, and many others. I have seedlings of all the above named growing; but a large portion of them have not yet borne fruit; and of those that have, I am sorry to say the number promising any valuable results is very small. We have grapes enough of merely tolerable quality already; and I perceive no benefit to the public in multi-

plying this class. But if a Delaware of increased size of bunch and berry, with also somewhat stronger growth could be produced, all would recognize its value at once. Or if a Catawba could be produced, ripening early in September, its worth could hardly be estimated. As much might be said of a hybrid, with the quality and flavor of the Frontignans, or Hamburgs, if united with the hardiness and earliness of the Concord. I am laboring in the *hope* of producing some such result, but I cannot express much confidence of ever reaching it. Certain I am, that I have not done so yet. Of the Delaware seedlings, none are equal to their parent in their present stage of development, though one or two white ones may be worth perpetuating on account of their color.

Of the crosses of Delaware and Logan, but one so far seems worthy of any attention. This one has many good qualities, being perfectly hardy, with thick, strong healthy foliage, very productive, having usually four bunches on each fruit stalk; bunches rather large, compact; berries black, oval, and intermediate in size between Delaware and Logan, ripening about the first of September. The quality, apparently a perfect mixture of the two varieties—an improvement upon the Logan, but inferior to Delaware.

Of the Catawba and Logan cross some two or three may be regarded as promising as the one above mentioned, ripening also early in September. They have borne fruit two years, and if they observe the usual law of improvement as they become more fully developed by age, may be of some value. While I believe it is *usual* for grape seedlings to improve for a series of years after they come into bearing, I have reason to doubt its being universal; for some Delaware seedlings, and I think some others have developed *the wrong way*, having been better in their first bearing than ever since.

As to the hybrids with foreign varieties, though but few have borne, I have nothing

very encouraging to report. Several of them have borne fruit—but none have yet met my expectations or wishes.

Of hybrids, as well as seedlings, a large number prove weak, unhealthy, tender, and subject to mildew. All such are unworthy of any attention, for in seedlings such defects appear radical, and no treatment that I have been able to give has ever removed them.

In planting seed, I have never used any more than two years old, but have found these to give nearly as well as the first year. They were kept, however, during the first year in corked vials, and not subjected to freezing till the second year.

In addition to those above named, I have re-hybridized several of Mr. Rogers' Hybrids with Black Hamburg, and other foreign grapes,—but I believe none of the seedlings from these have been able to endure the Winters, and have died out the first winter they were left exposed.

I might mention many other particulars as to the effect of hybridizing upon the foliage and habits of growth of our native varieties, but will not at this time further tax your patience, or that of your readers. I may, perhaps resume the subject hereafter, as further facts present themselves.

Delaware, Ohio, May 10, 1865.

A CHAPTER ON THE WREN.

BY G. P. DISOSWAY.

"They have no team, and have no plough;
They neither reap, nor sow, nor till,
Yet God in heaven feeds them still."

HEBEL.

I LOVE the Wrens. Birds, from the earliest times, have excited the attention and the admiration of man,—a thousand familiar songs and rhymes greet them along their paths, as they pass by us on their airy journeys. Spring, now so transcendently beautiful, would be mournful without birds, like winter, is more desolate and gloomy by their departure.

The Wren is an active, lively, familiar little bird, and shares with the Robin, especially the affections of the country people. Its flight is direct, from bush to bush, and feeding principally upon insects, and occasionally seeds and fruits. In the spring and summer time, the male sings a very sweet song, exceedingly loud and rich, especially when we consider the smallness of the pipe producing the cheerful notes.

The flight of a bird truly seems supernatural, and this wonderful power by which the birds are lifted beyond the sphere of every day life attracts us most. But song

is the bird's mystery; and we can hardly fancy to ourselves the free rovers of the air not endured with some force. The dumb bird, is to me, as it were, a lonesome sight. What a world of tones between the hoarse cawings of the black Raven, and the enchanting song of the Nightingale,—the shrill cry of the Osprey, as he swoops upon his doomed prey, and the cooings of the Turtle Dove! How manifold, too, are the accents of a single bird's voice! Now altered quickly, now soft and long drawn out; then fine and sharp, with sudden stops. Thus it has the power alike to express the feelings of content, love, or of sorrow and jealousy; in short, of every joy and every grief.

Who does not remember the delight, which the earliest greetings of the Lark awaken within our bosoms, with the coming spring? That refreshing feeling pervading the heart, when, after cheerless wintry days and nights, the first sunbeams arouse this active race to new songs.

It is clear, the birds give a melodious voice to the fair face of nature, and along

with it, that indescribable charm, which nature's beautiful works can exercise over the minds of men.

The Wrens are very familiar, seeking to be near the habitations of men, although they do not exhibit the same confidence as the Robin, generally concealing themselves very quickly when too closely approached. Wrens pair about the middle of the spring, and early in April, begin to construct their nests. These they place principally in holes and crevices of walls, banks or trees; on thatched roofs, and among climbing plants. They are lined with feathers, and contain from 7 to 12 eggs, and have two broods a season. It is calculated that these little beings bring food to their young, not less than two hundred and seventy-eight times in a day, with some insect every visit!

Our American *House Wren* is migratory, coming from the south early in May, and builds its nest at times in the wooden cornices, under the eaves, and always in the little houses prepared for them. We are very careful to provide these welcome annual visitors, every variety of accommodation in the way of *wreneries*. We sometimes imagine, they are so well pleased with them, as to return to the same rural dwelling, among our honey suckles or running roses they occupied the previous season. We repair these bird cottages regularly every spring, carefully as we do our own rural abode. But take a peep inside of them; who can help admiring the internal domestic arrangements, composed of so many different materials, and arranged with such marked skill and labor.

The greatest wonder is, that the whole is done without any other tools except a little beak and two very small feet.

Man can erect magnificent edifices according to the rules of art, and it is no wonder, for reason guides his hands. But who has taught the Wren that she is to lay eggs, and must have a nest for this purpose? Who, that it must not be too large or too small for her rising family? Who teaches

her the exact time, so that she never lays her eggs before her nest *is finished*? All that has been said in answer to such questions, is unsatisfactory to us, and does not account for these mysteries, wonderful as INSTINCT is. Let us not be contented with a solution from this mysterious source.—Instinct should be only the first step to more exalted and sublime meditations. We cannot properly say that *nature* teaches the birds this art, for if you separate nature from its GREAT AUTHOR, it becomes a word without meaning. Rather should we glorify God, the wise CREATOR, and acknowledge that HE alone gives wisdom, skill and industry, even to the fowls of the air.

We all remember our nursery rhyme:

"How doth the little busy bee,
Improve each shining hour,"

And we can, with great propriety, adopt the sentiment to the WREN.

How doth the little busy Wren,
Improve each shining hour?

For a more industrious small bird we do not know. It is constantly on the wing, or busily engaged in finding insect food, as it hops from twig to twig. The Wren will richly repay you rents for his houses, in the destruction of myriads of larvæ and insects, colonies on your vines and fruit trees, unseen by you, but plain to his bright, piercing eyesight. We often watch his rapid motions with his useful bill, while engaged in this good work, and at the same moment, beguiles the hour with a cheerful song. He is a great songster, in his line, pouring forth his cheerful notes early and late, raining or shining. While I write, an easterly storm is raging, but my welcome, cheerful kitty Wren, every now and then pours forth his joyful spring notes, near where he and his lady love are evidently preparing for house keeping.

We love the WREN, and advise all to give him a pleasant home.

THE CLOVE, S. I., May, 1865.

EVERGREENS.

BY I. H., LONG ISLAND.

How often are we reminded of the uncertainty of terrestrial things. About the first of Spring we took a walk among some new varieties of evergreens, and were delighted with the fresh green of their appearance. They looked very promising, in fact all we could wish.

The next day was unusually warm, the thermometer ranged about 80° in the afternoon. In a day or two we again looked at our evergreens,—what a change! The pretty green was turned to a dingy brown, and all the outside of the trees were scorched.

We have had much cold weather this winter, and but little snow here, so it was not the snow or the cold, for they had passed through a temperature of 10° below zero unhurt. What then was the cause of the browning of trees that came from the western coast of America—the *Thujopsis borealis*, Lawson's Cypress, &c.? Last year the *Cryptomeria Japonica* were all killed after a hot day in March, so were a few others injured. We think that the roots had not begun to draw up the moisture from the soil to compensate for the evaporation caused by an unusual warm day, and they were scorched as if placed in an oven.

We know they withstand the hottest days of summer without injury, for the resinous sap diluted by the moisture drawn by the roots from the soil, supplies all the demands of evaporation upon it. But when exposed to such sudden elevations of temperature in the latter part of winter or early in spring, before the sap is in active circulation it must burn. Box and other evergreens on the north side of the house, or other cool sheltered places was unhurt. We think the cold or the freezing of last winter, or any winter had nothing to do with it. Excessive cold kills the fruit buds and tender deciduous trees and plants, but we think not the evergreens. It is the

heat and not the cold, and then only by great and sudden changes.

When the trees are small a slight protection from the sun's rays will suffice, but we believe our old well tried friends, the Pines, Hemlocks, Norway and White Spruce, American and Siberian Arborvitæ, among larger trees, and the Swedish Juniper, Erect Yew, and a few others, perhaps will give the best satisfaction. If we plant good specimens of the older kinds, take good care of them and give them the needful training they are beautiful enough for any one. Too few attend to the training of their evergreens after they are planted. In selecting evergreens, the oftener they have been transplanted the better roots they will have, and the more compact will be their growth—a very essential condition. We do not care so much about the top of a tree, for if wrong it can be righted by cutting back and training; but if deficient or wanting in the lower branches, and the upper branches extend beyond, nothing but severe trimming and some years retarding will bring it to a proper shape.

If a pine grows long and spindling cut off the leader on the top, and the leaders on the first and second tier of side branches. Select one of the branches that can be best spared and tie to the stump of the upright shoot. Nipping out the central bud when two or three inches long will answer to make the tree bushy. Spruce and Firs will form leaders for themselves, and if the leader shoots up too long, or the upper side branches extend out too far, so as to overtop the lowest ones which they should never do, cut the limbs back the same as we would for a fruit tree or flowering shrub, Spruces, Hemlocks and Arbor Vitæ can be trained singly by the use of the shears, as we want them, or in the form of hedges as easily as deciduous trees or bushes.

LETTER TO MY COUSIN SELINA.

DEAR COUSIN SELINA :

I remember my promise, when I left our home away up country, to write you from the city during my visit, and give you sketches of some things which should seem most note-worthy, and most likely to interest you. I have visited the great libraries of the great metropolis—the Astor, the Society, the Historical, and the Mercantile—and bewildered myself among the multitude of books, very many of which are strange to me, even in name. I have lounged in and out at Schaus', Goupil's, and the Old Düsseldorf, and enjoyed, with a new and intense delight, their exhibitions of art. I have, for several days, been one in the crowd at the Fortieth Annual Exhibition of the National Academy of Design, in their new and unique building, now first occupied. I have foregathered there, not in person, but as they have expressed themselves on canvass and in color, with Bierstadt and Church and Durand and Huntington and Kensett and Weir, and with a score of other and younger artists, until I seemed almost willing to forget the fair face and aspects of nature in my admiration of art, and for the moment felt that my heart would never again leap up when I got back into the still and solitary country, and beheld the rainbow in the sky. In all this, as you may readily understand, I have literally reveled. The only material drawback to me, who have lived all my life, as far as bodily conditions are concerned, in the secluded country, and visited galleries and libraries only in fancy or in dreams, has been that my mind has been overcrowded with objects for thought and admiration; my inspirations have been perplexed and my sensations confounded by the *embarras des richesses*.

But I do not intend to undertake now any description of these objects of interest which I have named. I have made, indeed, some memoranda, and arranged as well as

I can the order of things in my memory, not forgetting, as you gave me charge, my regular records in my diary, so that, when I return to the country, I shall be able, perhaps, to afford you some entertainment and pleasure with my recollections of what I have seen and enjoyed.

However, yesterday I thought again of the "rainbow," and of the green and beautiful country, the fresh air, the bright sunshine, and the song of birds, and I resolved to spend the day in the Central Park. It was not my first visit to those delectable grounds, and I am the better able, therefore, to undertake to sketch for you some of their principal charms; and, as the weather to-day is too unpropitious for outdoor explorations, I shall endeavor to give you some account of what is to be seen there. I send you, however, no minute description or statistics, because I am sure you have not forgotten the pleasant papers on the Park which we read together in the last year's numbers of the *HORTICULTURIST*.

You are aware, doubtless, that the Park contains about eight hundred and fifty acres, one fifth of which is water surface, lakes and ponds and pools. The total cost of the land and construction, to this date, is about nine millions of dollars.

These magnificent grounds are open to the public, and the people are allowed free access at all times. They are visited daily not only by the wealthy classes who can drive or ride, but by many thousands of those whose lot is cast amid the toil and turmoil of the great city, who have thus the privilege of refreshing their eyes and senses with the floral and other treasures on which so much cost and care have been expended. These grounds, you understand, are quite extensive; and nature has given them such diversity, and art has varied them with such beautiful slopes and soft lawns, and planted them with such varieties of trees and shrubs and flowers, as to render

them wonderfully attractive to every lover of the beautiful. I cannot tell you now whose was the brain to plan, whose was the experience to carry out the plans, whose was the fostering care that crowned those plans with such complete success. Several superintendents and architects and eminent landscape gardeners have been employed; but there is an evident unity of design and plan which indicate that the cultivated taste and artistic eye for pleasing combinations of forms and judicious distribution of colors, and a true judgment in grouping and symmetry, have not been wanting. Woods, lakes, pools, fountains, clumps of trees, single trees, masses of shrubs, all have been duly arranged, and as it were made to fall into their respective positions in the landscape; and no slight experience or imperfect knowledge of the harmonies of forms and colors could lay out a thousand acres of undulating park, so that the wood and water should be made to assume their most picturesque forms, and a million bright blossoms of every hue be gathered into their proper places. All this seems to have been provided for and duly regarded, so as to take full advantage of the capabilities of the ground; and the result is a triumph of landscape gardening, creditable alike to the fine taste and the practical skill of those who have had the superintendence of the Park. And thanks to the large munificence of the city of New York, these beauties are freely accessible to the tens of thousands of the industrious classes, whose long days of toil amid brick and smoke and steam make a visit to the fresh loveliness of the country a healthful medicine to mind and body.

As we stroll through these grounds, and gaze upon the many flower-beds, each for the most part filled with but one particular kind of flowering plant or shrub, but all one blaze of beauty; as we admire the borders, composed of lines of flowers, crimson, orange, blue, white, purple and scarlet, all in their proper season and place; as we feast our eyes upon these glowing colors and rich masses of green shrubs, and spaces

of smooth turf, we cannot doubt for a moment that the expenditure of these millions has been both wise and beneficent.

I cannot go into much detail as respects the variety and richness of this collection of trees and shrubs and plants; but I must mention that there are valuable specimens of the Pine tribe, some of which have been procured with considerable cost. Among the thirty specimens of the Pine, we find here the *Pinus macrocarpa*, and several others whose *habitat* is in the Rocky Mountains, the *P. Montezumæ*, *Ayacahuite*, *Banksiana*, *Excelsa*, *Insignis*, &c. But I am going more into detail than I purposed. I must leave description, and anticipate improvements of which there are no special indications as yet, but which undoubtedly are embraced in the plans of the commissioners.

Cowper says, "Who loves a garden loves a green-house too"; and it is to the green-houses and conservatories which are yet to be added to the Park that a large degree of interest will be due. Certainly to one who, on a lovely summer's day, looks upon the Central Park as it is, upon the flower-knots, each filled with its own peculiar color, and scattered like rainbow drops over the wide expanse of velvet lawn; to one who observantly rambles through such grounds, drinking in deep draughts of delight at every step, as the varied beauties of the spot pass before him—its pools, and lakes, and fountains, and cascades, its ravines, and caves, and rocks, its architectural structures and statuary, its clumps of fine growing trees, its plantations of rare and beautiful evergreens, its thickets of rhododendrons and azaleas, its undulating borders of herbaceous plants, and all its thousand triumphs of nature and art, combined and harmonized—there might seem to be small need of any thing more. It may well be pronounced perfect in its present state. Any seeming deficiency will be amply remedied by the natural growth; and when these transplanted trees shall crown themselves with a half or a quarter century's increase, the

Park will be the realization of a terrestrial Paradise.

But, O Messrs. Commissioners of the Central Park—I should say, if I were writing to them, instead of my sweet cousin Selina—O give us, the public, green-houses and conservatories too! Cousin, let us step into this great Conservatory, crammed with bloom, with climbing plants wreathed around its pillars and girders, and swinging their festoons on high; the orange-house, with its living bridal bouquets and golden globes; the green-houses with their roses, and heaths, and begonias, and gloxinias, and camellias, and a thousand and one floral attractions; the vineries, and pinneries, and peacheries, and orchard houses, rich with luscious fruit; and the stoves, hot and damp, and overpoweringly fragrant

with the odor of Cape Jasmine and delicate exotics, with fairy-like ferns, and rare lycopodiums, with water-lilies and other aquaria floating in their hot tanks, with dwarf trees, and tussock grasses, and prickly cactuses, and strange orchids, with their curious blossoms like winged birds, butterflies, and insects. Ah, what a world of marvel and beauty is here!

But the rain is over, and the sun is shining out brightly and warmly in the western heavens. An engagement to dine and sleep with my Westchester cousins compels me to close my letter to my cousin in the far-away homestead. With love to uncle and aunt and cousin Washington, I am, as aforetime,

Your affectionate cousin,

REUBEN.

NEW YORK, June 9, 1865.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

CLEVELAND, Ohio, 6th June, 1865.

It's dangerous writing you, Messrs. Woodward, for you have a queer way of printing one's scribbblings; and the first one knows of his hasty remarks is that it has been printed, and then somebody has been drawn out into the writing of a long article, &c. Well, never mind. If they all tell as much of plain truth as our friend Husmann did about grape growing, or rather about preparation of ground, why, let them write.

I have mislaid my copy of the HORTICULTURIST for May, or I would touch upon an item or two in that article; but I here give Husmann, and all other good grape men, notice that I am going to speak out some day; and as I see somebody out West wants to know what I think about locations and soils for grapes, you may tell him I'll write.

But I now say that, while the grape can be made to grow and fruit almost anywhere and in almost any soil, it is not every soil and location that will prove profitable as vineyard. I will say one other thing also now, viz., that expensive trellises of posts and slats, with wires running up and down across the slats, and training grapes thereon, may do for fancy garden culture, but will not answer for vineyard, both by reason of expense and the actual labor of tying and pruning. By-the-by, every man, it is said, is good for something; so, in our grape meetings, it is said I am good to draw other people out, by question or assertion, and now I want to know who, among your readers, has ever tried tying the ends of long canes of the grape together, giving each vine two canes of six feet each, placing

one stake at the vine for new wood to be tied to, and one stake half way between each vine to support the tie of the two connecting canes that are to fruit.

And again, who has succeeded in bringing an apparent barren vine into fruiting by cutting in of its roots and pruning it back just after the first leaves have formed?

Early Purple Gnigne Cherry and some others are now ripe and fine; but most of the varieties, as Elton, Downton, Bigarreau, &c., were materially injured by a late frost.

For three good cherries take Early Purple Guigne, Rockport and Red Jacket; and for prairie or other very rich soils, let them be worked on *Morello* stocks.

Strawberries are showing fine; but if the weather keeps hot and dry as for the past week, they will not last long.

By the way, how is it that all my Russell's Prolific and Buffalo, show strictly pistillate flowers? I am sure I read that they were termed perfect.

Again, will some one tell how to pick out the plants or fruit of the two *named* sorts above, one from the other? I suppose there is a difference, because honorable men have said so, but I can't see it.

Pears are showing fine, and if nothing happens I hope to send you fruit of a new very early sort, a seedling never yet let out. I would say it is "excellent," but that word is attached to nearly every pear in nursery catalogues. However, will taste them, and then coin a word perhaps.

Apples only small crop.

Yours, F. R. ELLIOTT.

MESSRS. EDITORS:

I have been sadly disappointed with my bed of Russell's strawberry this season. Having been repeatedly assured that they were self fertilizing, I planted them in my garden at a distance from other varieties, wishing to keep them unmixed. They flowered abundantly, but did not set the fruit. The flower I examined carefully, but I could not detect, even with a magnifier, the *capsula staminis*, which they are

said to possess. The anther is so exceedingly minute that it requires some faith to discover it; and I pronounce it "very uncertain." Were the plants genuine? Yes, for, after the bed above described was planted, I had fifteen or twenty plants left, which I set on a border separated by a garden path from Wilson's, Albany; and these few plants are Russell's Prolific, beating in quantity either Wilson's or the far famed Agriculturist. My advice is to place a staminate among the Russell, to entitle it to its adjective *prolific*.

M. V. M.

Hardpan, June 15th, 1865.

PRINCE'S NURSERY FOR SALE.—We call the attention of our readers to the advertisement of Messrs. Prince & Co., of Flushing, who offer for sale their old and well known Nursery. Flushing is one of the immediate suburbs of New York, easily reached at all hours, by boat and train, and is an attractive and convenient locality to live in.

Comparatively speaking, the vicinity of New York has never had anything like an adequate advantage in local Nurseries; they are few and far between, and owing to small competition, their proprietors have become men of solid and substantial wealth. So fine a field, and so vast a demand makes the environs of a great business centre like New York, superior to most other localities for the nursery trade. An established and well known nursery is seldom in the market, and those who are looking for a good opening in this line of business, should investigate the offer of Messrs. Prince & Co.

THE MULBERRY.—When every other tree in garden, wood or wold has donned the green vesture of spring, one still remains in "naked majesty," as Adam of the Eden. The cold night winds nipping so many tender buds which had been too early lured forth by transitory noontide sunshine, beat harmlessly upon the mulberry's sapless bark; and not till the last spring frost is

over, and cold has finally yielded to the mild persuasions of approaching summer, does it abandon its bare-branched security, and suffer its young leaves to venture forth, gladdening the watchful gardener with an unerring token that his hitherto sheltered nurslings may now be safely trusted in the open parterre.

But though the foliage displays such singular reticence as regards making its first appearance, it might offer the same kind of apology which was tendered by Charles Lamb, when on being remonstrated with for coming to business so late in the morning, he replied, "but then remember how early I go away in the afternoon." For though mulberry leaves are the last to put forth in spring, they are the very first to leave in autumn, the least frost bringing them all to the ground.

GRASSES.—In the early summer our fields and meadows are feathered by numerous flowering grasses, which form objects of great interest to the botanist and the artist. Yet comparatively few avail themselves of the great pleasure which these elegant plants offer. Flowers are eagerly culled for the tasteful bouquet, but seldom does a group of flowers present so light and graceful a contour as a group of grasses. Ferns and seaweeds are patiently studied, and grasses are neglected, though these latter are much more easy of classification, more beautiful as dried specimens, and as valuable in cultivation, and in our drawing room vases. These graceful plants, however, are gradually receiving more attention from the fancy gardener, especially among the English cultivators. Bunches of *Pampas* grass wave their pennons on the English lawns, and lift high their panicles of glossy florets; and the *Hare's tail*, *Panick* and *Quaking* grasses alternate with flowers in the gay borders. In Germany and Switzerland, we find grass bouquets in every drawing room, and dried ones for the winter, retaining their own soft and delicate coloring.

A grass is the simplest form of a perfect plant. From a fibrous root a slender stem shoots up, clothed with alternate leaves, which are long and narrow, and have the veins running side by side from one end to the other. In the true grasses the stems are round and hollow, and the sheathes of the leaves open at one side; but in their cousins, the sedges, the stems are solid and angular, and the leaf-sheathes form perfect cylinders. The highest leaf on the stem of the grass, acts as a cradle for the buds until they are sufficiently formed to emerge to the open day.

THE GARDEN.—"My God, my garden, and my grave, is now all I have to live for," was once said by a pious churchman who had spent a toilsome life, and was ready to depart with Simeon's prayer upon his lips. In the quiet of his garden there was much to attune his heart to the great change through which he must soon pass, through the grave to the ineffable presence. In his garden, he would be surrounded by "floral apostles,"—as Horace Smith called them—that would silently preach to him many lessons of truest wisdom; for, in the words of Allan Cunningham:

"There is a lesson in each flower,
A story in each stream and bower;
In every herb on which you tread,
Are written words, which, rightly read,
Will lead you from earth's fragrant sod,
To hope, and holiness, and God."

Indeed, the occupation that is to be found in the garden, brings not only health to the body but to the mind also. This is admirably illustrated in an instance to which we wish to call the attention of such readers of the *HORTICULTURIST* as have occasion to witness the numerous examples of juvenile depravity in our great cities, and are interested in their reformation.

In the eastern suburbs of London, a professional horticulturist has long since adapted the benevolent and praiseworthy scheme of giving employment in his gardens to those young thieves who wish to leave off their sinful course of life and take to

honest labor,—labor which no one seems disposed to give them, and the lack of which, therefore, throws them back into their old evil ways. This humane person comes to the rescue of these outcasts, and sets them to work in his gardens, where there is no sedentary occupation in a close and stifling atmosphere to repel them at the outset of their undertaking; but where there is plenty of fresh air, labor enough to procure appetite for their meals, sufficient society to be pleasant without being pernicious, (for there are wise rules on this point, to prevent the boys from herding and plotting together and keeping up the contaminations from which they have been rescued,) and sufficient freedom to make them feel otherwise than prisoners. After a time of probation satisfactorily passed, they are entrusted upon errands, and sent to pay and receive bills; and there is scarcely an instance in which the trust reposed in them has been found to be misplaced, but in the majority of cases, the judicious treatment, and the gentle delights of the garden have completely humanized the little outcasts, and have fully reclaimed them from those "gardens of guilt" in which their early years were passed. Such a work as this is truly philanthropic and christian.

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THE FRUIT AND CROPS IN THE INTERIOR.

—Inquiry among the fruit-growers and farmers affords very pleasing information as to the prospects of the season in their important departments of industry and production. Fruit of all kinds most cultivated hereabout promises well. The trees have withstood the Winter and have budded in a promising manner. May has opened mildly, and there is reason to hope that no frost will blight the tender fruit. Bountiful crops of peaches, apples, pears, cherries, plums, grapes and strawberries will yield those who cultivate in Western New York, hundreds of thousands of dollars, and afford pleasure to all who consume these luxuries that Providence permits us to enjoy in this favored climate. The reports from the fields are

no less favorable than from the orchards. The farmers began their Spring work pretty early, and accomplished more in the way of planting and sowing in April this year than in any that has preceded for a long time. The weather has been opportune. Owing to the scarcity of help more time was requisite. But little ground will go uncultivated for want of labor, as the hoeing, haying and harvesting times come along there will be plenty of laborers from the returning army at the South. The fall-sown crops—wheat, rye and barley—promise well. The Winter and the Spring were as favorable as the farmer could desire. We may congratulate the farmers and all others of Western New York—for all are interested in the success of the crops—on the prospect the season affords.—*Rochester Union.*

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VEGETABLES FOR THE LONDON MARKET.—

In the gardens about London, according to the statement of Mr. Loudon, the following are the chief varieties of vegetables cultivated for market:

Of the *Cabbage* tribe, seven varieties,—the white, the red, the savoy, the brussels, the borecole, the cauliflower, and the broccoli.

Of the *leguminose* plants,—the pea, the kidney bean, and the garden bean, with their endless sub-varieties.

Of *esculent* roots,—the potato, the Jerusalem artichoke, turnip, carrot, parsnip, red beet, skirret, scorzonera, salsify, and the radish.

Of the *Spinaceous* plants,—the spinach, orache, white and sea beet, the wild spinach, New Zealand spinach, the sorrel and herb patience.

Of the *alliaceous* roots,—the onion, leek, cive, garlic, shallot, and rocambole.

Of the *asparaginous* tribe,—the asparagus, sea kale, artichoke, cardoon, rampion, and alisander.

Of the *acetarious* tribes,—the lettuce, endive, succory, celery, mustard, wood sorrel, corn salad, garden cress, American cress, water cress, and the small salads.

Amongst the *pot herbs* and *garnishings*, are the parsley, purslane, tarragon, fennel, dill, chervil, horseradish, nasturtium, marygold, borage, &c.

Amongst the *sweet herbs*, are the thyme, sage, clary, mint, marjoram, savory, basil, rosemary, lavender, tansy, and cotsmary or alecost.

For the uses of confectionery or medicine, the following plants are cultivated:—the rhubarb, gourd, angelica, anise, coriander, caraway, rue, hyssop, chamomile, elecampane, liquorice, wormwood, and balm.—The tomato, the egg plant, capricum, and sapphire are also sometimes grown.

“THE GARDEN is a bound volume of agricultural life, written in poetry. In it the farmer and his family set the great industries of the plough, spade and hoe in rhyme. Every flower or fruit-bearing tree is a green syllable after the graceful type and curse of Eden. Every bed of flowers is an acrostic to nature, written in the illustrated capitals of her own alphabet. Every bed of beets, celery or savory roots or bulbs, is a page of blank verse, full of *belles lettres* of agriculture. The farmer may be seen in his garden. It contains the synopsis of his character in letters that may be read across the road. The barometer hung by his door will indicate certain facts about the weather, but the garden, lying on the sunny side of the house, marks with great precision, the degree of mind and heart culture which he has reached. It will embody and reflect his tastes, the bent and bias of his perceptions of grace and beauty. In it he holds up the mirror of his inner life to all who pass; and with an observant eye they may see all the features of his intellectual being in it. In that choice rood of earth he records his progress in mental cultivation and professional experience. In it he marks by some intelligent sign, his scientific and successful ceremonies in the cornfield. In it you may see the germs of his reading, and you can almost tell the number and nature of his books. In it he will reproduce the seed-thought he has

culled from the printed pages of his library. In it he will post an answer to the question whether he has any reading at all. Many a nominal farmer's house has been passed by the book agent without a call, because he saw a blunt, gruff negative to the question in the garden or yard.—*Elihu Burritt.*

FLOWERS AND PERFUME.—Unlike many usages of remote antiquity which are still preserved, the employment of perfumes is in no wise indicative of barbarism. The most refined nature delights in the sense of smell, and the more delicate the human organism the more exquisite is the enjoyment. For the most part, choice perfumes are derived from flowers, or vegetable productions, though several varieties highly esteemed are the product of the animal and mineral kingdoms, and through the aid of chemical science, perfumes are extracted from substances associated only with the most repulsive odors. For example, butyric acid, the product of rancid butter or putrid cheese, imparts the flavor of a luscious pineapple; the fetid fusil oil, obtained in rectifying liquors, becomes an essence of pears; the noisome oils of gas tar are made to yield the flavor of bitter almonds, being often preferred to the genuine article for confectionary and culinary purposes. But as a general rule those odors which are intended to gratify the sense of smell, are instinctively suggestive of whatever is beautiful in the world of flowers, and are regarded as an ethereal form of floral creation. Their fragrance brings to mind

“Gorgeous flowrets in the sunlight shining,
“Blossoms flaunting in the eye of day.”

France, Switzerland and Italy are the most prolific of flowers, as a source for the supply of those who distill essences. In some places the culture of flowers for this purpose is on an enormous scale. The flower harvest gathered and sent to the towns of Cannes, Grasse, and Nice, in France, exceeds 2,500,000 lbs. per annum. In Cannes alone the quantity manufactured is as follows: Orange blossoms, 1,475,000 lbs.; roses, 530,000 lbs.; jasmine, 100,000

lbs.; violet, 75,000 lbs.; acacia, 45,000 lbs.; geranium, 30,000 lbs.; tuberose, 24,000 lbs.; jonquil, 5,000. In Grasse the product, no doubt, is still larger, as this town recently had no less than seventy establishments engaged in the manufacture of perfumes, and the other two about thirty. The process of distillation is very simple, the odor of boiling flowers being condensed with the steam, in the form of "ottos." Besides this, a favorite method is the process of *enfleurage*, or maceration, in which grease is repeatedly charged with flowers, till the precious odor is absorbed to the requisite degree. The flower farmers of the Var cultivate many acres, from which the crop is gathered by women and children, then weighed in the laboratory, where clarified suet, lard, &c., is accumulated through the winter season, and afterwards spread on glass frames like a window sash, to receive the repeated layers of blossoms as matured from day to day. The grease being inflored in this way, is at last scraped off, strained, and packed in canisters for the market. Dr. S. Piesse, whose work on perfumery enjoys a wide repute, lectured upon this subject a few weeks ago, before the Royal Horticultural Society of London, giving a great variety of interesting facts, such as the effect of blending different blossoms, the method of cultivating roses, cassie, jasmine, &c. An acre set with 7,000 rose plants is expected to yield 5,000 pounds of petals worth say £30. Cassie, after the third year, yields from £30 to £40 per acre. In cultivating jasmine, 8,000 plants are set to the acre, and 60 lbs. weight is yielded by every 1,000 plants after the second year. The tuberose is the most difficult flower to grow, but is the most profitable, a good plantation lasting seven or eight years. The orange in full vigor yields an average of 25 lbs. weight of blossoms annually. The violet is so susceptible to the sun's rays, that on the farms at Nice this delicate plant is grown under the shade of orange and lemon trees, or where protected by walls. A surface of land equal to one acre, yields 180 to 200 lbs. of flowers, valued at two francs the

pound. Dr. Piesse stated that in France, this traffic has risen to the annual value of £3,000,000. England has always been famous for the production of lavender. The two Sicilies export the oil of lemon and bergamot in large quantities. The United States contributes essences and essential oils, such as peppermint, wintergreen and sassafras, but this branch of industry with us has as yet scarcely attained an embryo existence. The climate is not remarkably propitious for flower culture, and the competition from abroad in the shape of imported oils and essences is great. The "manufacturing perfumers," or those whose speciality is to convert these substances into the varied forms which enter into domestic consumption, chiefly centre in London and Paris. The number of establishments of this character in London is between forty and fifty, and in Paris there are twice as many. The manufacture of fancy soaps is a leading feature. The United States have for a long time been profitable customers, but of late a high tariff imposes conditions before unknown, and which, in process of time, are likely to effect great changes. Among American cities, Philadelphia has taken the lead in this department of enterprise, several manufacturing firms having invested largely, and from these have originated numerous offshoots of less consequence, but which contribute, in the aggregate, perfumes, soaps, and other toilet goods, considerable in amount. New York has four heavy firms which enjoy a wide reputation for this description of goods. Colgate & Co., last year consumed oils and essences in their business to the extent of several thousand dollars. Lanman & Kemp manufacture some thousands of gallons of Florida water, chiefly for the South American trade, and others might be mentioned. It will not be strange if eventually flower farming in this country lends its enchantment to the landscape and its odors to the breeze, though at this rudimentary stage of the business, it is difficult to compete with the cheap labor and more propitious climate of southern Europe.—*Tribune*,

THE COST OF NEW PLANTS.—It is something fearful to contemplate the price these plants cost. I do not mean the guinea and a half you gave for that new *medinilla*, nor even the \$20 you gave for that splendid mass of a new orchid; no, I mean the price in men's lives. It is worth while to think, as for the first time you contemplate a plant which has just gained the gold medal, what the man had to go through who sent it home to increase your pleasure and mine. He stood face to face with death for months—for years, perhaps; with death in all its most terrible forms. He could, it may be, count his attacks of fever by the score, like Livingstone, and calmly write home to his friends that he was just recovering from his forty-eighth attack. He may have been in peril from wild beasts of all descriptions, and dependent for the supply of his daily wants upon natives, scarcely, if at all, less ferocious than the wild animals. His home was a hut built with a few branches in the depth of a primeval forest; or he swung his hammock between two trees, and slept there, with the sky for the only roof that covered him. What he found to live upon we had better not inquire. One collector told me he was obliged for weeks to strain every drop of water he drank through the only fragment of a shirt he had left. You may safely set these men down as 'total abstainers,' if you expand the meaning of the term so as to include not only those who drink no intoxicating beverage, but who also abstain totally from all the so-called comforts of life. Perhaps the greatest comfort one living in a foreign land can enjoy is to receive a letter and a newspaper from home, but Sir Rowland Hill's emissaries do not traverse the districts into which the botanical collector has to penetrate, and so even this pleasure is denied him. Very many botanical collectors have died far away from any civilized spot; a long list of these victims could be given, their only monument being the plants which they have introduced.—*Hibberd's Gardener's Magazine, Eng.*

THE HOMES OF MERRY ENGLAND.—It would seem, from recent inquiry and examination, that the dwellings of a large portion of the laboring rural population of England afford very little, if any, more decent and comfortable accommodation than the miserable tenement abodes which disgrace New York City.

Dr. Hunter was last year commissioned by the Privy Council to inquire into the house accommodations provided for agricultural and other laborers in rural districts. He examined over five thousand different dwellings in various counties, and inquired into the local circumstances of each district. His report has just been published, and we find the following summary of it in the *Pall Mall Gazette*. It is quite mournful and miserable enough that the heterogeneous population of all sorts, of natives and foreigners, in our large cities, should be subjected to such physical and moral degradations and demoralizations as exist in the over-crowded and offensive regions which they inhabit. But it is a much sadder and more revolting sight to see the agricultural laborers and the various classes of operatives in the rural district of a great nation, thus herded together in the foulest air and in the most indecent and demoralizing circumstances, while there is plenty of space, and of blessed sunshine, and of pure atmosphere, to which they are indubitably entitled.

Of 5,375 laborers' cottages, Dr. Hunter found that 2,195 contained only one bedroom. On the average there were four persons to each bedroom. The open villages are the favorite investment of cottage speculators, who buy scraps of land, which they crowd as densely as they can with the cheapest of hovels. Dr. Hunter furnishes a lengthy and detailed account of the state of the cottages throughout England; but Mr. Simon, the medical officer of the Privy Council, in his preliminary remarks, indicates some typical cases. In Wrestlingworth, Bedfordshire, Dr. Hunter visited seventeen houses, only four of which had more than one bedroom. The single-roomed

cots contained three adults, with three children; a married pair with six, with five or with four children. At Dunton, in the same county, Dr. Hunter found six adults, with four children, sleeping in one cottage bedroom, and paying for it £3 10s. a year. Only one cottage out of fourteen visited in the village had two bedrooms. A little outside the village stands a house for which the owner until lately received 25s. a year. "The lower nine inches of the door having gone through sheer rottenness, a few more bricks were ingeniously drawn against it from within after shutting, and a bit of matting hung on the side. Full half of one window was gone, glass and framework too. Here, without furniture, huddled three adults and five children. At Beenham, in Berkshire, he saw a house in which the bedroom had no windows, no fireplace, no door, nor hole, except that in the floor, by which it was entered. The walls lean together, meeting a flat ceiling five feet nine inches in width, and five feet seven inches above the floor. A man lately lived here with two grown-up daughters and a growing son; father and son slept on the bedstead, the girls on the floor." At Tinker's End, near Winslow, a bedroom is reported in which slept four adults with five children, and which measured eleven feet by nine, by six feet five inches at the highest point; another one, eleven feet seven by nine feet by five feet ten contained six persons. Each of these families had less than the allowance necessary to one single convict. No houses had more than one bed-room. In Great Hallingbury, Essex, there were thirty adults and twenty-nine children in twelve small bedrooms; but even this rate was exceeded in Langtoft, Lincolnshire, where in twelve bedrooms were lodged thirty-eight adults and thirty-six children. At Gamlingay, in Cambridgeshire, where a wretched hut not worth £20 can be let for £2 15s. a year, "eight and nine people were found in the single bedroomed houses, and in two cases six adults slept in a room with a child or two." At Madley, in Herefordshire, Dr. Hunter "called at a pair of single bedroom-

ed cots, let by the overseers at £2 a year; in one he found four adults and a child, in the other no less than eight adults with but one sleeping-room. These huts measured externally 12ft. 6in. square!" In Lubenham, Leicestershire, out of thirty-five houses, twenty-two had only one bedroom. In one bedroom lived a married pair, two boys of twenty and eighteen, a girl of seventeen, and a grandchild; in another, a married pair with five children; in another, six adults, with two children; in another, a widower, his two sons, his two daughters, and their two natural children. Again, at Stratton, Wiltshire, seven adults and one child slept in a single apartment. These are by no means exaggerated or extreme cases. They are only such as may be matched in any two or three pages of Dr. Hunter's long report, and may be taken as fairly illustrative of cottage life in England. To comment upon such cases, to point out the moral as well as physical evils which are inevitably engendered by a domestic existence passed in defiance of all the laws of health and all the rules of merest decency, would be superfluous.

BOOKS RECEIVED.

SERMONS PREACHED IN BOSTON ON THE DEATH OF ABRAHAM LINCOLN, together with the funeral services at Washington. Published by J. E. Tilton & Co., Boston, price \$2.00. This book, issued in an elegant and appropriate style, is one that should find a place in every library. A memorial of a prominent tragic event, and of the pulpit eloquence of the day.

MESSRS. TICKNOR & FIELDS have commenced the publication of a handsome series of Illustrated Books, in paper covers; the first number of which is "Household Poems," by LONGFELLOW, being a collection of many of his most admired verses, handsomely printed and beautifully illustrated; "Songs for all Seasons," from TENNYSON, will make the second number of the "Companion Poets for the People."

THE HORTICULTURIST.

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PRUNING THE PEAR TREE.—(CONTINUED.)

IF during the preceding summer, any lateral branches have developed feebly, then in place of this pruning you should cut them a little longer than their neighbors, or even leave them untouched.

It will be equally good practice to *notch* the trunk first above the branch. If the bud on which you had counted to have a branch has remained dormant, this *notching* would become still more indispensable. If in time there be no bud at the point where a branch would be necessary to fill a vacancy, you should insert there a graft. To this intent, if you have foreseen the vacancy, you might have developed below on the trunk a superfluous branch, which you could graft in during the year following its development, and this at the point where necessary to supply the vacancy—fig. 470. When the union is complete, you separate the branch from the trunk at A, and then cut it at B, below the point of union. When on the contrary, a lateral branch shall have acquired, despite the *pinchings*,

a disproportioned development, in order to diminish its vigor, you should cut it shorter

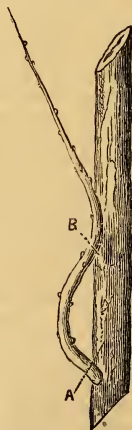


FIG. 470.—Grafting in a Branch.

than the others. If the difference of thickness which it presents is very marked, it

will be well to make a notch below its junction with the main stalk. These precautions should be observed during the whole period of the formation of the pyramid. During the summer which follows the second pruning, you apply to the shoot of the leading branch a treatment the same as that practiced on the original leader.

In addition, the shoots developed on the side branches are pinched to 1 inch from their starting point when they are only about $2\frac{1}{4}$ inches long, with the exception of the terminal shoot which is left intact, in order to furnish the prolongation of these branches. The pinching of these lateral shoots has the effect to diminish their vigor in such manner as to transform them progressively into fruit branches. It some times happens, especially with the shoots near the end of the branches, that a single pinching is not sufficient to arrest their growth, and that the eyes at the shoulder of the leaves at the end of the pinched shoots, start into fresh growth; in such case these must be pinched in like manner when they have attained a length of $2\frac{1}{4}$ inches. You must look out that the terminal shoots of the side branches, and the new shoots of the leader preserve a corresponding degree of vigor. The nearest shoots to the end of the leader will especially show a considerable development. You must watch these particularly, so as to prevent their hurting the growth of the leading shoot, which should always keep the pre-eminence, so as to prolong the main trunk of the tree. You attain these various results by means of pinching.

Third Pruning.—After the operations we have just described, the tree will present in the following spring the appearance of figure 471. The leader is cut at the same length as the preceding years at A.

The lower lateral branches are cut also as long as possible at the point marked by a transverse line. The upper branches are cut shorter, so as to favor the growth of the lower ones left favorably situated in respect to the natural flow of the sap. The

little shoots of the lower branches intended to be transformed into Lambourdes undergo the operation of breaking. (This operation described in another part of the work, is intended to throw the lower buds on the broken shoots into fruit buds, instead of making new growth; and this takes place by reason of the broken wood not healing as speedily as if cut by the knife.—*Translator.*)



FIG. 471.—Third Pruning.

You give to the tree during the summer the same attention as during the preceding years. If on the *broken* branches any vigorous shoots should start pinch them in like manner.

Fourth Pruning.—Figure 472 shows the changes which the tree has experienced during the preceding summer.

The fourth pruning differs from the others in several respects. You give to the shoots of the lower branches half less the length of previous pruning, because they are about to reach the limit which they must not be allowed to pass, and because they have otherwise attained a thickness which will ensure to them all the vigor they should have. The branches of the

second and third stories are cut at the point indicated by a transverse mark.

You leave them greater length than the preceding year, because the lower branches have less need of protection, and it suits in commencing to give the tree a pyramidal shape.

The first shoots of the branches of the first story which received during the preceding year the operation of *breaking*, are subjected this year to the pruning which we have previously prescribed for them. (Also, in another part of the work, this

almost entirely the limit which they ought not to pass, it will be requisite to allow their terminal shoots only a very limited development, so as not to employ uselessly the sap of the tree.

Fifth Pruning.—Our tree now begins to look up, (fig. 473) and the lower branches, being kept down under the effect of their own weight, give to the whole of the structure the pyramidal shape.



FIG. 472.—Fourth Pruning.

first shoot is cut off neatly, just above the second bud from the base, or the bud changed to a fruit bud, so as to replace the broken wound by a clean cut which will heal quickly.—*Trans's r.*) The little shoots starting from the branches of the second story are *broken* as were these of the first story. In fine the leader is shortened the same as in the previous years.

During the summer, you apply to the tree similar care as already prescribed.

We should remark, however, that the branches of the first story, having obtained



FIG. 473.—Fifth Pruning.

Some of the lambourdes of the lower branches have already fruited during the past summer. The pruning of this year does not differ from that of the preceding year; but in one point of view, that is to say, the branches at the base having already attained all the length they ought to have, you should no longer attend to their prolongation. In that respect you cut them short. As to the other branches they

ought all to be cut in such wise that their ends will touch the line A B, which extends from the ends of the lower branches to the tops of the leader after it has been cut back. The operations of the summer are, in all respects, the same as those of the preceding year.

Sixth and Seventh Prunings.—The sixth and seventh prunings differ in no respect from the fifth. Sometimes, in place of the seventh winter pruning, you ought to give to the lambourdes which have already fruited several times, the attention already prescribed.—(*i. e.* breaking and subsequent cutting.) Without this precaution these productions would have an indefinite growth, and cause confusion in the tree.

We would further add, that in proportion as the lateral branches elongate and are formed, they augment in weight and that, deviating them from their primitive direction, they approach too closely to the earth, or to the neighboring branches, and produce confusion in the tree.

In order to avoid this difficulty, you should go around among the trees after the pruning, and bring back the branches into their proper direction by means of fastening, and in such fashion, that there shall be an equal space between them all.

At the end of the seventh year, the tree will present the appearance as in figure 447. It has now acquired the proportions which it ought to maintain; that is to say, its

total height equals three times the entire diameter of its base.

If the ground occupied by the roots permit them to spread, the tree will have a tendency to enlarge its development. You may take advantage of this to give the pyramid grander dimensions. To this intent you will allow the leader to elongate anew, and also all the lateral branches, but in such wise as always to preserve between the height and diameter of the base the proportion we have above mentioned."

This treatise of our author which we have taken special pains to translate for our readers, we consider the most logical, philosophical, and intelligible of any that we have seen on the subject; and as such we commend it to our readers for careful study. There seems to be nothing left unsaid which ought to be said; and not a word too much on any one point. By studying this article, and putting its teachings in practice on his own trees, the amateur may attain a degree of proficiency and skill, that will soon exhibit itself in his trees; and he will moreover learn enough not to trust his pruning to other hands than his own. As to this particular form, our author says, "it is incontestibly the most advantageous; that by which the trees occupy the least space, yield the most abundantly, and show the longest duration. We do not know that we can recommend it too highly."

A PIG AND A COW.

I PROPOSE an odd horticultural subject; but the man who plants a garden, and builds a cottage, and carries in his thought the hope of shaking off the dust of the city under green trees upon his own sward-land, where some—nameless party—in white lawn, with blue ribbon of a sash (as in Mr. Irving's pretty picture of a wife), stands ready to greet him, after an hour of torture at the hands of our humane railroad directors—the man, I say, who looks forward to

all this, and enters upon the experience, thinks, sooner or later, of a cow and a pig—the pig to consume the waste growth of his garden, and the cow to supply such tender food for his growing ones as they most need.

The pig can hardly be regarded as a classic animal; Virgil, indeed, introduces him as crunching acorns under elm-trees—which account I cannot help reckoning as apocryphal. But he is a very jolly and

frisky little animal in his young days, not without a great deal of clumsy grace in his movements, and showing a most human zeal for the full end of the trough.

There is almost the same diversity of opinion with respect to the different races of pigs which our horticultural friends indulge in with respect to fruits. It is always an awkward matter to discuss the merits of different families, whether of animals who talk, or animals who only grunt or bellow. If the raw suburban resident, in whose interest I make these notes, has an ambition to rear a prize hog that shall outweigh anything his neighbors can show, and intends to keep his bin full of rank material, I should certainly advise the great-boned Chester County race, which with judicious feeding come to most elephantine proportions. If, on the other hand, he should prefer a dapper, snug jointed beast, that shall not be particular in regard to food, and which will yield him cutlets in which the muscular material shall not be utterly overlaid and lost in fatty adipose matter, I should counsel the sleek Berkshire. Or if, uniting the two, he should desire a delicate limbed, well rounded, contented little animal, that shall browse with equanimity upon the purslane and the spare beet tops from his garden, I know none safer to commend than the Suffolks. Nor is it essential that he be thorough bred, since the tokens of *pur sang* are a red baldness, and a possible twisting away of the beast's own tail, which do not contribute to good looks.

All this is but preparatory to my reply to Lackland, who writes to me: "We have voted to have a pig and a cow; what kinds shall I get, and how shall I keep them, and what shall I do with them?"

And I wrote back to him: "Buy what the dealers will sell you for a Suffolk; if he lack somewhat in purity of blood (as he probably will), don't be punctilious in the matter. Let his sleeping and eating quarters be high and dry; and if you can manage beyond this a little forage ground for him

to disport himself in, and wallow (if he will) on wet days,—so much the better. The forage, if you keep him supplied with raw material in the shape of muck, or old turfs, from your hedge-rows, will add largely to your compost heap, and in this way he will make up any possible sacrifice in his flesh. Miss Martineau, I know, in her 'Two Acre Farming,' advises severe cleanliness; and if the only aim were a roaster for your table and accumulation of fat, there might be virtue in the recommendation. But a pig's work among your turfs is worth half of his pork. He will thrive very likely upon the waste from your table and your garden. But, against any possible shortness of food supply, it were well to provide a bag of what the grain people will sell you as 'ship stuff'; and this, stirred into the kitchen wash, will make an unctuous holiday gruel for your little beast, for which he will be clamorously grateful.

"Again, the sty should be convenient to the garden (a hemlock spruce or two will shut off the sight of it, and a sweet honey suckle subdue the odors of it); then you may throw over chance bits of purslane, or the suckers from your sweet corn, or a gone-by salad, and find thanks in the noisy smacking of his chops. I would not give a fig for a country house where no such homely addenda are allowed, and where a starched air of propriety must always reign, to the complete exclusion of every stray weed, and to the exclusion of the rollicking Suffolk grunter in its corner, who squeals his entreaty, and declares thanks with the click-clack of his active jaws.

"He will take on larger and clumsier proportions month by month, and will be none the worse for the occasional carding which your zealous Irishman can award him in spare hours; and when, in the month of October or November, the waste growth of the garden is abating, and the frost has nipped the bean tops, and laid your tomatoes in a black sprawl upon the ground, your Suffolk (with, say, one or two additional bags of mixed feed) should be ripe for the knife.

"My advice, at this juncture, would be—sell him to the butcher. Those who like pig flesh better would give you rules for cut and curing. But, while I have considerable respect for the pork family when fairly afoot and showing grateful appreciation of the delights of life and of a full trough, I have very little consideration for the same animals when baked or stewed. Charles Lamb's pleasant eulogium on roast pig is one of the most terrible instigators of indigestion that I know; and I want no better theory for that charming writer's occasional periods of bitter despondency, than to suppose him to have dined 'at seven, sharp,' upon the dish he has so pleasantly and fearfully extolled.

"I do not mean to say that exception is not to be made in favor of a good rasher of bacon at breakfast, with a fresh egg (from the cock—as a city friend once suggested in a flow of cheery, rural exuberance); nor do I think anything can be righteously said against a snug bit of clear pork in a dish of boiled, corned brisket of beef; nay, I would still further extend the exception to a crisp fry of delicate slices as an accompaniment of grilled trout, where the latter fall below a half-pound in weight; nor do I think great harm of a thin blanket of the same condiment to enwrap a roasted quail, or slivers of it to en-lard delicately a fricandeau of veal. But, as for pork chops, or pork roast, or pork boiled, to be eaten as the chief piece nutritive of a dinner—it is an abomination! Our friends the Jews have not only scriptural reason in the thing, but reasons physiological.

"And now, my dear fellow, having dispatched your pig (who should be bought for five or six dollars at seven weeks old, and should be sold at twenty—from the growth of your garden and a splicing bag of ship stuff), you will have, if you have used proper vigilance, some three to four loads of choice compost to contribute to the vegetable growth of the next season. There is a notion that manure from such a source provokes the growth of club-foot in cabbages and cauliflowers; but after repeated

trials with a view to fix this averment, I am unable to do so. Club-foot is not lacking with awkward frequency; but appears quite as often, so far as my experience goes, with other fertilizers as with that from the pig sty. A good liming and fresh turned soil are, so far as I can determine, the best preventives. Another precaution, which in my view should never be neglected, is to remove and destroy at once all plants which show symptoms of this ailment.

"The cow is a more tractable subject. Of course, you wish one that never kicks, that any one can milk, that will not resent indignities, and will yield you all the milk and the butter you need, and possibly the cheese.

"I remember that a city gentleman of great horticultural (and other) ability called upon me not many years ago, and after descanting upon the absurdity of planting two acres for a crop, which could be easily grown from half an acre, he asked me how many quarts of milk my cows averaged per diem? 'Fourteen to fifteen quarts,' said I 'in the flush season,'

"'But that is very small,' said he; 'there is no more reason why you should not have cows giving twenty to twenty-four quarts a day, than why you should not have strawberries giving two quarts to the plant.'

"I was not prepared to gainsay the proposition. The truth is, I feel a certain awe of distinguished horticulturists that blinds me even to their wildest assertions. What has an humble cultivator to do, or to say in the presence of a man who has bagged his premiums at a New York Horticultural Society, and is taster *ex-officio* at the Farmer's Club?

"I did not argue the matter with him; I submitted; I acknowledged my mediocrity humbly.

"Now my dear fellow, there are cows which yield their twenty to twenty-five quarts a day, but they are very exceptional. Many such, whose private history I have known, have been fed upon their own milk with the cream taken off. This involves,

as you will admit, I think, a quick reconversion of capital, which, with children in the family, is not always practicable.

"In a general way, I should say, it would be far safer to count upon an average of twelve to fifteen quarts per day, even with the best of care. And as regards your actual purchase of an animal, I dare say you will have Wall Street friends, who will talk grandly of the short horns, and suggest some Daisy, (1397, A. H. B.) at a cost of six or seven hundred dollars, and—viewing her pedigree—cheap at that. My advice to you is, don't buy any such, unless you intend to turn breeder, and enter the lists with the herd book people. I say this; not because the short-horns are not admirable animals; but admirable animals are not always the best domestic animals,—as some of your recently married friends may possibly be able to testify.

"But a man, who, like yourself, comes to the country for a leisurely enjoyment of all country bounties, does not wish an animal that must invariably be kept under the best possible condition; he wishes a docile, adaptable creature. Even a snug native beast might meet all the ends you would have in view, without figuring largely upon the cash book.

"Or still better, a sleek Ayrshire, that shall carry in her air and horn a little show of better breeding and full returns to the milk pail. But if you have a fancy for cream that is fairly golden, and for occasional conversion of excess of milk into a little *paté* of golden butter, nothing will suit your purpose better than a dainty Alderney, with her fawn-like eyes and yellow skin.

"I am aware that the short-horn people who can see nothing good in a cow, except her figure show mathematical straightness of line from tail to the setting of her horn—sneer at the comparatively diminutive Alderneys. It is true, moreover, that there may be in them a hollow of the back, and an undue droop to the head, and possibly an angular projection of the hip-bones; but

their nose is of the fineness of a fawn's; their eyes bright and quick as a doe's; their skin soft and silken, and with a golden hue, (if of good family) which gives best of promise for the cream-pot. Above all they have a tractability, which, in a domestic pet, is a most admirable quality. 'Spot,' (the black and white Alderney,) the children can fondle; she can be tethered to a stake upon the lawn, and will feed as quietly as if she were in a field of lucerne: she is grateful for a *bonne bouche* from the garden, and takes it from the hand as kindly as a dog. This docility is a thing of great consequence upon a little country place where every animal is made more or less of a pet. It is not every cow that will bear tethering upon a lawn; there are those indeed who can never be taught to submit to the confinement. The sleek Alderneys inherit a capacity for this thing, and I have seen upon the green orchards near to St. Hiliers, (Isle of Jersey,) scores of them, each cropping its little circlelets of turf as closely and cleanly as if it had been shorn. In way of convenience for this service, it is well to have an old harrow tooth with a ring adjusted to its top, and revolving freely, into which ring an iron swivel should be attached. To such a fixture, easily moved, and made fast in the ground by a blow or two of a wooden mallet, a halter may be tied without fear of any untwisting of the rope, or of any winding up or other entrapment of the poor beast. I give these hints because it is often convenient to give a pet cow, from time to time, some detached feeding ground, where the shrubbery will not admit of free rambling; and there are none whose habit is better adapted to such indulgence upon the lawn than the Alderneys.

"If your cow be kept up constantly for stall-feeding, an earthen floor is desirable, and by all means a half hour's run in the barn yard of a morning. A darkened shed will be a great luxury to her in fly time, and will largely promote the quiet under which she works out the most bountiful re-

turns from the succulent food from the garden. A bit of ground in lucerne,—say four rods square, (it should be in drills and kept hoed the first season) will yield an enormous amount of food material, and if convenient to the stall, your children will delight in binding it up in little sheaves for “Moolly.” If such a bit of ground be so situated as to admit of an occasional sprinkling with liquid manure, four good cuts in a season may be safely counted on; nor do I know any summer herbage which cows love better. Remember furthermore, that the lucerne, as well as corn fodder, are improved by a half day’s wilting before being fed. In winter the carrots and mangel wurtzel will become available; both of which any cow may be taught to love, (if teaching be necessary) by giving them a good sprinkling of meal. In the change from summer to winter diet, and from winter to summer, it must be remembered that

all sudden changes from great succulence to dry food, or vice versa, is to be most cautiously avoided. Lack of care on this score is the secret of half the cow ailments.

“If I were to lay down a pleasant and productive winter dietary for your Alderney, it would be a peck of sliced roots in the morning, not forgetting a lock of sweet hay; at noon a quart or two of brewer’s grains and fresh water *ad libitum*; at night a warm pail-ful of drink, into which a quart of coarsely ground buckwheat meal shall have been stirred, and another lock of sweet hay in way of night cap.

“With such food, and an occasional combing, at the hands of Patrick, (all the better if daily) I think you may count upon such golden returns of cream as will bring back a taste of the grassy spring-time.”

Thus much for Lackland’s Pig and Cow.

Edgewood, July 1st, 1865.

WATER PLANTS.

BY EDWARD S. RAND, JR.

AMONG the many classes of vegetation in the floral kingdom there is no family of plants more attractive than that which forms the subject of this article. Whether we regard aquatics in view of their brilliant and fragrant flowers, their curious and often beautiful foliage, or the numerous adaptations of peculiar structure to special ends, the whole class is particularly attractive and interesting. Yet, with the exception perhaps of the various classes of cryptogamous vegetation, there is no class of plants with which we are so little acquainted; and certainly there is none which will more richly repay attention and careful study. We do not now speak especially of the aquatic flora of the tropics, which is particularly rich and beautiful, and to which attention has been called of latter years by the discovery of the noble ‘Victoria Regia’ in the western hemisphere, and the importation of the gorgeous scarlet water

lilies (Nymphæa) from the eastern; but we desire also to call attention to our native aquatics, which, in various forms of attractive beauty, may be found in every river shallow, pond or brook, and which cultivated in aquaria become most interesting objects of study.

Many of these plants are exceedingly minute, so much so as to require microscopic examination for a full development of their structure; and it is in these plants that the animal and vegetable kingdoms approach so nearly that the line of demarcation is, if not wholly lost, involved in great obscurity.

But, interesting as these minute creatures may be to the botanist and naturalist, it is not to these we especially would call attention, but to the plants of larger growth which are interesting from delicacy of foliage, peculiarity of structure or beauty of flower. In order, however, to really enjoy these plants, we must grow them where

they can be objects of daily observation, and in such a manner that they may be in a measure under our control; for, however near we may be to a river or pond, circumstances which we cannot control may often seriously interfere with our studies.

If we have a pond or brook where our plants can grow without molestation, we may raise many of the larger and coarser species in great perfection; but, to obtain an intimate acquaintance with the more delicate plants, we must bring ourselves into nearer relations to them, which can only be done by growing the plants in tubs or in glass aquaria, which latter mode is far preferable as enabling us to make the most accurate observations, and note each new development of beauty. It is a curious fact that many rank growing plants under this treatment assume a peculiarly fine and delicate nature: thus the common pond weeds (*Potamogeton*), which naturally grow in muddy shallows, and are not plants of particular interest, if planted in a glass aquaria with pure sand and pebbles, lose their coarseness, assume a more delicate growth, and become very ornamental.

Again, we may, without the aid of a green-house, grow in the open air, during the summer, some very beautiful tropical aquatics. We have thus grown most successfully the blue Lily of the Nile (*Nymphæa cœrulea*), the beautiful *Limncharis Humboldtii*, and the curious and fragrant *Aponogeton distachyon*.

The winter treatment of these plants is very simple, being merely the removal of the tubs to a light cellar soon after the heavy autumnal frosts. The water should be almost entirely drained off, and the plant allowed to rest; but it should never be dry; and if growth continues, it must be encouraged, and fresh water and a warm light situation given. There is always danger to the plant from rotting, especially with *Nymphæas*, often with *Limncharis*, but seldom with *Aponogeton*, which is the hardiest of all, often growing and blooming all winter, even in the dark.

The aquaria in which we grow our plants are of two kinds, wooden and glass.

The former are simply old oil barrels cut in two, each barrel making two tubs. These are perfectly water tight, almost imperishable, and if painted green very ornamental; those bound with iron are the best. Care should be taken, when they are put outdoors, to set them on bricks or pieces of joist, to prevent the contact of the bottom of the tub with the ground, which would speedily produce rot.

These tubs are suitable for the growth of such plants as require a muddy soil, and whose chief beauty is in the floating foliage and bloom, such as *Nymphæas cœrulea* and odorata, the white and blue Water Lily, *Limncharis Humboldtii*, *Calla Lilies* (*Richardia Æthiopica*), and Pickerel weed (*Pontederia cordata*).

The glass aquaria are made of slate and glass, and may be of any size or shape; they are adapted for the growth of delicate native aquatics, affording a full view of the beauties of foliage, which can only be seen when the plant is suspended in the water.

The winter treatment of hardy aquatics is simply to remove the tubs to a shed or cellar, where the water will not freeze very deep, so that the roots may be preserved in the mud; the greater part of the water may be drained off to advantage.

The glass aquaria should in winter be emptied and stored, unless it is convenient to winter them in the green house or at a sunny window.

The most important point in growing all aquatics is to provide for the renewal of the water: this is essential to the health of some plants; with others it may be disregarded. In glass aquaria it is particularly important, as the surface of the glass soon becomes coated with green slime, which can only be prevented by a constant change of the water. If a head of water can be procured, and a constant flow kept through the aquaria, it is all that can be desired. Our practice is to renew about one-fourth of the water each day, drawing off from the bottom, and filling at the top, or simply overflowing the tub by turning water from the coarse rose of a garden water pot.

It is also well to place a couple of gold fish in each tank, and to raise in each a colony of snails, which are of great service in eating up the slime. Care must, however, be taken to proportion the animal and vegetable life in each aquaria, as an undue preponderance of either will speedily cause the water to become offensive; in regulating this, experience is the best guide.

The usual time for putting out the aquaria in the latitude of central New England is about the 10th of May; the time for housing them about the 1st of November; thus giving nearly six months of open culture. As a general rule, put out when the nights begin to be warm, and house just after the first severe frosts. We have had ice half an inch thick in tubs of *Limncharis* and *Apogyneton* without injuring the plants.

The soil for the growth of water plants in tubs should be rich leaf mould and peat mud; it cannot be too rich, but all must be well decomposed.

In glass aquaria, fine, clear sand and bright pebbles are most ornamental, and most plants thrive well in them. It only remains to describe a few of the most attractive aquatics, premising that all our native water plants possess beauties sufficient to render them worthy of cultivation, and the beginner may find in the nearest pond enough to occupy his attention for many summers.

NYMPHÆA.—This family includes some of the most desirable plants for open culture; the flowers of all the species are deliciously fragrant; those of the hardy species are usually white, of the tropical blue, red, pink and white. The plants require to be set in rich mud at the bottom of the water, and they require a large tub as the foliage is large and spreading.

The hardy varieties are *N. alba*, native of England; *N. nitida*, from Siberia; *N. odorata*, our pond lily; *N. pygmaea* and *reniformis* are half hardy species, with white flowers from China and Carolina.

The only tropical species we have grown successfully is the beautiful lily of the

Nile (*N. cærulea*). The flower is sky blue, with yellow centre, and of the most exquisite fragrance. This species is half hardy, and has even endured a New England winter in the mud of a deep pond; but the plant was somewhat injured. The other species require the heat of a stove, and to be grown in a tank where the water can be warmed.

NELUMBIVM.—The only hardy species is *N. luteum*, the yellow water lily of the Western and Southern States. The flower is ornamental, pale yellow, resembling a double tulip, and the plant would probably be hardy in New England. Culture the same as *Nymphæa*.

Nelumbium speciosum, the species producing the sacred bean of India, is a most ornamental plant; flowers white or rose, single or double, and very fragrant. It requires hot-house culture.

EURYALE ferox.—The only species is a singular aquatic, every part of which is covered with stiff prickles. The leaves are about a foot in diameter, the flowers somewhat smaller than those of the *Nymphæa*, of a bluish purple or violet.

It is a native of the East Indies and China, and is of easy cultivation in a stove where it will seed freely with artificial impregnation.

NUPHAR.—This is a genus of about half a dozen species, all of which, except one (*N. Japonica*) are known to be hardy.—The flowers of all are yellow. Our most common species are *N. advena*, very common in rivers, ponds and ditches, and called yellow water lilies, and *N. Kalmiana*, a smaller and rarer species.

The European species are *N. lutea*, (found also on this continent, according to some authorities) *N. pumila*, much resembling the last, but smaller, *N. sericea*, native of the Danube, and *N. Japonica*, native of Japan.

N. sagittifolia is a southern species which might be hardy in the middle States. All the species are of the easiest culture in rich loamy soil.

SARRACENIA.—A small genus comprising

the plants known as Pitcher plants, or side saddle flowers. They are well worth cultivating, both from their beauty and singularity.

They are not strictly aquatics, but being bog plants, require a moist place to ensure success; they do well in an aquarium on rocks just above the water, but where the roots can be in wet sphagnum.

Our most common species is *S. purpurea*. *S. rubra* is a smaller Southern species, with beautifully curved leaves.

S. flava often produces leaves or pitchers two feet long; the flowers are yellow.

S. variolaris much resembles the last. The first species is hardy, all the rest requiring green-house protection in winter.

MENYANTHES or Buckbean.—A beautiful genus of bog, nearly aquatic plants.

Our most common representative is *M. trifoliata*, our American variety, being of stouter habit than the European. The leaves much resemble clover, whence the name 'water-clover.' The flowers are rose color and very beautiful.

The plant is of easy culture in water and bog earth.

The other species are *M. cristata* or *crista galli*.

APONAGETON.—A genus of elegant aquatics of easy culture in the open air in summer, but requiring protection in winter.

The flowers are white, with black dots, exquisitely fragrant, and of peculiar shape. The commonest and hardiest species is *A. distachyon*, which is a very free bloomer. *A. angustifolium* and *juncifolium* are species from Southern Africa.

Limncharis Humboldtii, a most beautiful tropical aquatic, which flowers freely all summer in the open air. The blossoms are canary yellow, with black eye; last only a day, but are produced in great profusion. The plant may be grown in a tub in rich loam, in which the runners root freely; in an aquaria in pure sand, or planted in a pond where it will flower beautifully till cut off by the frost.

These are but a few of the aquatics we may grow and bloom with little care.—There are many others equally curious and beautiful, of which we may name the water target, (*Hydropeltis purpurea* or *Brasenia peltata*) the many species of bladder-wort, (*Utricularia*) the water crowfoots or buttercups, (*Ranunculus aquatilis* and *Purs-hii*), the water arums. (*Peltandra Virginica*) and *Calla palustris*. The large natural families of Water Plantain (*Alismaceae*) and Pond weed (*Naiadaceae*), also contain many curious and interesting plants, which, in cultivation, present many before unnoticed beauties.

Glen Ridge, July, 1865.

NOTES ON THE MAY NUMBER.

LACKLAND'S HOUSE PLANS.

A most capital article, and comes pat to me, because, in my line of life, I have had to plan and contrive to remodel and make or save a new house out of numerous old ones. It is my general plan, I must say, however, to discard all old houses, further than simply to repair them and leave them in their original state; because the expense is usually as much to make the additions and changes as would build the new house

entire. I, this spring, however, remodeled a little cottage, which I will give as another instance where money can be saved, and comfort obtained. The house to work upon was, as you will see by the plan, 32x24, with a rear wood-shed of 10x24. My scale is 16 feet to one inch.

After studying the matter over, the building being only one story, 9 ft. between ceiling and floor, the porch side a flat roof

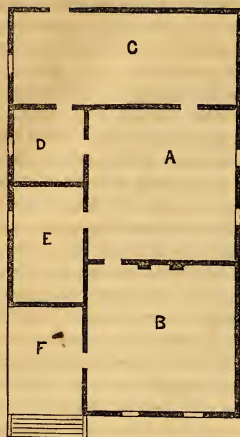


FIG. 1.

- A—Dining Room, 16x16.
 B—Living Room, 16x16.
 C—Woodshed, 10x24.
 D—Pantry, 8x8.
 E—Bed Room, 8x12.
 F—Porch, 8x12.

Here is the plan as it now stands:

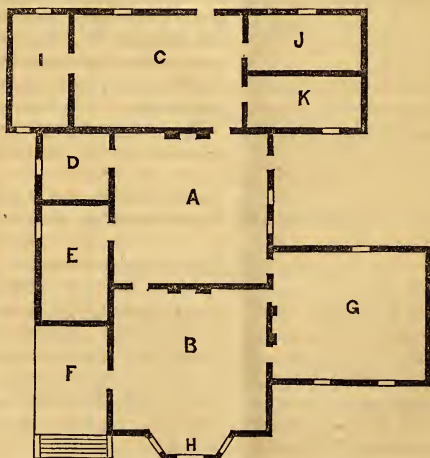


FIG. 2.

- | | | |
|-----------------------|--------------------|-----------------|
| A—Dining Room, 16x16. | E—Library, 8x12. | I—Pantry, 7x12. |
| B—Living Room, 16x20. | F—Porch, 8x12. | J—Bed, 6x12. |
| C—Kitchen, 12x18. | G—Bed Room, 14x16. | K—Bed, 6x12. |
| D—Bed Room, 8x8. | H—Bay Window. | |

of 8 feet, and the owner only having four to five hundred dollars to expend. I planned and changed it as follows, and so as to come within his limits of expenditure.

The bay window new, the wing new, and the rear part made by cutting the woodshed in two and turning it, and filling up the centre. Floor for all the rear new, and in the reconstruction, nearly all the walls were destroyed, or so much broken beforehand, as to have to be made anew.

In old times of Lumber at 12 to 20 dollars per thousand, and labor at 12 to 18 shillings a day, this would have cost about Three Hundred Dollars; but both labor and lumber are now high.

The chimneys, three in number, are stove chimneys, all new and the whole underpinned anew, but with the old material. A wing is planned to be added on the side of the new library, the wing to be two stories and 20x24 feet; and as the house now faces the north, having a view of the Lake, the two-story wing will give fine

position for a green-house or conservatory. The owner now does not choose to incur debt, neither does his needs require more room, so the house is as above depicted.

ORCHIDS.

To amateurs and young gardeners, these articles are most valuable.

BERRY CULTURE.—Although these tales of hundreds of dollars being gathered from a few acres appear to the cotton and corn grower as munchausens, yet their truth is none the less valid. If I recollect aright, it is but a few years since a farm of 42 acres in Illinois, took the premium as yielding more of net profit than any one in the State, where farms vary from the above number to thousands of acres. The great evil of this country is, a striving for extent of territory. It is the error of individuals, and I think of the nation.

In cultivating the blackberry, I noticed lately a plan as follows, viz: The bushes or plants are set in rows thick, the rows ten feet apart. After they have done fruiting, the old or bearing canes are at once cut out with a long handled hook knife, then leaves or chopped straw are liberally scattered among them, and early in the spring lightly forked in and a light dressing of the mulch again added.

CULTURE OF THE ROSE.—The very best article with the most plain and correct instructions that I ever read. It is worth more to the amateur than all the books that are printed. I can only add, that all roses give better and more blooms to be replanted yearly, and, the hardy ones, of course, in October, late if possible.

If early June blooms are not wanted, then spring planting will answer equally well, but all the first formed buds of spring planted perpetual roses should be cut away before opening.

NEW ERA IN GRAPE CULTURE.—Mr. Husman has come out into the light with some of his knowledge, and he here tells what many men at the west have long known, viz: that the works of all authors to this date, however theoretically correct they may

be, and valuable to the amateur, are no guide for vineyardists, where one man is expected to take care of four to six or more acres.

Why! gentlemen, the mere expense of posts, slats and upright wires recommended by one author would damp all favor of grape culture, were it not that there are abundant vineyards where one fourth or less of the expense in trellising is found requisite.

Give us more of "grape growing made easy," Mr. Husman, but be not sure that Missouri is going to grow *all* the Grape. Ohio, Pennsylvania, and even now Southern New Jersey, to say nothing of Illinois and Kentucky, produce many acres of grapes; and yet, the culture is comparatively in its infancy, and the knowledge thereof only just shadowing out.

COLOR AND CONSTITUTION OF PLANTS.—A well prepared article and evidently from careful study, but yet does not convince me that it is sound. I would know how long these experiments have been tested; the soil and condition of it, whether dry and underdrained, &c., &c.

Some years since I took the same view as here detailed and made some observations, but did not complete them. I however cannot think that the color of the petal of a flower, or the pellicle of the fruit has aught to do with the hardihood of the plant. A dark wood and dark green foliage may have to do in the ratio supposed by the Doctor. I shall be glad to read more of his observations, for, if they are not sound, he has done good in thus drawing attention to the matter and elucidating a certain amount of information.

GRAPE CUTTINGS FROM HISTORY is valuable in matter to the young learner, while **FRUIT CULTURE IN SOUTH JERSEY** is another of the records of a long neglected but really valuable country for growing of small fruits. Will S. B. N. tell us if the Norton's Virginia has yet been fruited at Egg Harbor City. As a Wine making grape, we have now no hardy vine of equal capacity. The pure Norton's Virginia wine equals, if it does not surpass any dark wine of any country.

CULTURE OF THE PINEAPPLE.—A good article for the stove-house man, but I think we will never be able to grow Pineapples in this section of country at prices to meet the means of the multitude.

FERNS.—No. 1.—A step in the right direction. Our hardy native Ferns are among the most beautiful of plants, and the most neglected. They are splendid acquisitions in the construction of rock work and rustic fountains.

RAISING SEEDLINGS.—Go ahead Mr. Merrick, if you don't succeed in growing

the best grape or strawberry in the world, our word for it, you will have gained much information, and more than likely diffused a spirit of enquiry around your neighborhood, that will bring forth forty fold of horticultural progress.

You ask, what varieties of Strawberries to hybridize? I would advise Hovey's Seedling and the Albany. The one a large firm berry, and the other so very productive.

REUBEN.

WINE MAKING IN NEW MEXICO.

BY J. G. KNAPP, MESILLA, NEW MEXICO.

THE making of wine in the native vineyards of New Mexico is of the most primitive character imaginable. It rather reminds one of the "treading the wine-press" in Judea, than of descriptions of wine making in France and Germany, as copied by the vintners of America. The theologians, here, could correct many of their ideas about the occult meaning of many passages of the Scriptures, by studying the habits of these descendants from the old Spaniards, in this as well as in many other respects.

The grapes having matured, which is in September and early October, and gathered in the peculiar saucer shaped basket, woven from the long leaves of the *Amoles* (Spanish Bayonet), are carried to the house at which they are to be crushed. Here they are rinsed with water, to remove any dirt which sticks to them from the irrigations, and dried. No water is allowed to enter into the juice. They are then deposited in a trough cut in a large cotton wood log, or in a half barrel tub, for crushing, a drain having been first provided to let off the juice as it may be set free. Some remove the berries from their stems; but generally they are not removed. There being a foot and a half or two feet of grapes in the trough, a man, with his clothes rolled up, and bare footed, gets in and commences the

work of crushing by stamping upon them. When the berries are all crushed, the pomace remaining in the trough is placed in a gunny sack, and pressed under a lever press. This is usually constructed by taking advantage of a tree, in which a hole or notch is cut, and a long pole is used for a press, with weights attached, somewhat as I have seen cheese pressed.

After the juice has thus been expressed, comes the fermenting process. For this purpose a close dark *adobe* room is prepared, with an earth floor and *adobe* roof, around which two strong beams are arranged about three feet apart, and six feet from the ground, for the purpose of holding the wine sacks, receivers or fermenting vessels. These are constructed by sewing with raw-hide a cow skin to four sticks, fastened together about two feet square, two of which extend out far enough to rest on the beams in the wine house. The hides being green, soaked soft, hang down, hair outside, like a pouch, and will contain from 25 to 50 gallons each. On the front side of the sack, near the bottom, a small round hole is cut, and a wooden plug inserted. This is for the purpose of drawing off the liquor. These being in place in the wine room, the new wine is transferred from the vat or press to them, until they are entirely filled. As

soon as the first fermentation has taken place, a cover is prepared for the sacks, by placing a cover of sticks woven together with raw hide, and just the size of the mouth of the sack; and over this is placed a layer of mud mixed with straw, so as to render them nearly air tight. In this condition the wine is kept until the winter months, when it is racked off and put in tight casks or bottled.

In a few instances a quantity of the fresh juice is boiled down until it is quite thick, and then this is put into the wine to add to its strength. This causes a deep red color, and a muddy character to the wine which cannot be clarified out; but it adds greatly to its strength and keeping quality. Without this addition, or clear sugar, which would be far preferable, the native wine, unless closely corked in glass, will not resist the heats of the first summer. Sometimes the wine is racked from one sack to another. This improves its purity, but injures its keeping properties by bringing on a second fermentation.

Wine fermented in new sweet hides is far preferable to that kept in casks. The hides part with a portion of their gelatine to the fresh wine, and thus retard the fermentation, at the same time that it clarifies the wine. Hides never can have their inner surface rotted or decayed by being in contact with wine or water, and thereby impart a woody flavor to the wine. A portion of tannic acid in the wine leaves it and unites with the green hide, so that the same will in a few years become almost tanned; and this tends to its preservation. After the wine is taken from the sacks, they are turned upward and left in their

places for future use; and require no soaking out or smoking with sulphur when again required.

Water is added to the pomace; and the scum of the wine is also used in making vinegar. The native wines bring to the vintner from two to three dollars a gallon; and under the present internal revenue, it has gone up to four and six dollars. The light wines are all consumed during the first eight months after they are made. Those that are strengthened keep, if undisturbed, for years. All are too sweet to suit the taste of those who only drink the manufactured wines in the States, or those made from the sour grapes of Germany and the States. The grapes of New Mexico are very sweet, almost without aroma, except the white, or *muscatel*. As they are never worked up until the berries commence drying on the vines, the tartaric acid is fully developed, and scarcely any other acid is found in them. In this the wine differs essentially from the Northern wines. This acid being far less soluble in the wine than are the acids of the Northern grapes, the grapes of New Mexico will not make the sour wines, but more resemble the sweet wines of Sicily than of France and Germany.

By the simple and primitive process above described, an old strong set vineyard will give a yield of \$2,000 to the acre, with an outlay of less than \$300 in tending the vines and manufacturing the wine, at old prices; and double that sum under present rates. Yet, strange as it may seem, but few persons are engaged in vine growing, and not one half enough is produced for home consumption.

FERNS.—No. 2.

IN our former paper on ferns, we spoke of them as being classed under two divisions: the Annulatæ, those in which the thecæ are provided with marginal ring, which operates in the dispersion of the seed, and the Exannulatæ, which have no such

appendage. The first class is divided into six families; the second contains but three. According to Newman, who is our chief authority, the first in order of these various families is the Adiantacæ, of which the most elegant specimen, probably, is the

Adiantum Capillus Veneris, or the True Maiden Hair.

The distinguishing feature of the family of the *Adiantacæ* is that the thecæ, or seed cases, are covered by a portion of the frond. Sometimes this appears like the inclusium, or membrane which ordinarily covers the thecæ, at other times it is evidently a portion of the frond itself. In the first genus of the family of which we are speaking—the *Adiantum*—the masses of thecæ are borne in circular clusters on a reflexed portion of the edge of the frond, and in the Maiden Hair they appear like oblong bodies rising from the edge of the leaf. This beautiful fern is usually found on moist caves or rocks near the sea coast, where it takes root firmly in the stony crevices. The young leaves appear in May, and are matured in July. The foot-stalk, which is of a rich crimson brown, divides at the base of the leaflet, and forms a ridge from which branch off strong but very delicate veins of a whitish green. These veins again subdivide, and fork off into pairs at about the middle of the leaflet, and each vein so formed forks a second time before it reaches the margin of the pinnæ where the masses of the seed vessels lie, and ornament the leaf with a sort of braided border of exquisite beauty.

It is an old notion of naturalists that ferns produce no seed that is visible. And this idea of the seed being invisible was carried out into the idea that if any such thing could be procured, it would render him who wore it also invisible. Shakespeare makes one of his characters in *Henry IV* say, “we have the recipe of fern-seed, we walk invisible.” And Ben Jonson says, “I had no medicine, sir, to go invisible, no fern-seed in my pocket.” We have seen, however, that the fern does bear seed in immense quantities, and that ample provision has been made in the structure of the plant, for dispersing, as well as preserving the seed from injury during its progress to maturity.

We come now to the genus *Lomaria*, of

which the *Lomaria Spicant* is one of the most conspicuous. The characteristic which distinguishes the *Lomaria* is that the thecæ are continuous, placed in line on the pinnæ which they nearly cover, while they in turn are covered with a continuous inclusium.

The singular and very beautiful appearance which this fern presents, from the mixture of dissimilar leaves on the same plant, and from the grace and vigor with which its noble tufts of vivid green rise from the earth and cluster in groups among the other ferns and flowers which adorn the mossy banks, attracts much attention and admiration. It is hardly excelled in beauty by any other fern; for though the *Osmunda regalis* may tower grandly above it, and the Shield ferns spread their broad fronds in unrivalled dignity, yet the grace of this plant, and the peculiar appearance which its narrow, comb-like fronds present, always attracts the eye of the admirer of nature, and compel his attention, whatever other beautiful objects may be near it.

The third genus of this family—the *Adiantacæ*—is the *Pteris*, known in the British Islands as the Bracken, and in this country as the Brake.

This is one of the commonest ferns, and is found every where in the wild districts, but it is one of those truly wild plants that disappears before cultivation. Its average height is from two to three feet, though in moist, shady woods it frequently grows to double that size. The mark of this group of ferns is that the thecæ form a continuous marginal line covered with a continuous inclusium. The young fronds which are tender, and often cut off by early frosts, come up like those of most other ferns in a circular form, but bent or doubled back, the leafy part being pressed against the stem. The generic name *Pteris* is given on account of its plume-like growth, and was that by which the Greeks called the whole tribe of ferns.

This fern has been thus described, from a specimen in the hands of the writer:—

"Around every part of each lobe runs a delicate border of a velvety appearance, and light brown hue. It follows the margin of the leaf most exactly, and is in due proportion to the size of the green leaflet on which it reposes, and consequently rather narrower on the upper than on the lower branches. The lowest pair of pinnatæ, and the pair next above it are deeply notched; and as the border continues to follow each part of the edge, it here necessarily assumes the form of a Vandyke. This beautiful border consists entirely of myriads of theæ

or seed vessels, which, if examined under a microscope, are seen to be little globular cases of a crisp and shining material, in each of which is contained a countless multitude of minute grains like a brown powder.—These are the organs of reproduction."

This is not only the most abundant, but the most useful, perhaps, of all the ferns. In Europe it is used for thatching, for litter for cattle, for packing fruit, and in some places for fuel. It has, also, medicinal qualities, and contains so much alkali that its ashes are used for making soap and glass.

NOTES.

BY T. T. S.

FRUIT TREE BORERS.

As it is both better and easier to prevent than to cure, I would recommend the following article as a cheap, lasting and good preventive against the working of the Borer: Take of Fish oil and Sulphur, and make a moderately thick paint; bring the soil from the base of the tree and spread on the paint as low down as possible and as high up as needed, say a foot or so. The more offensive the oil is in smell the better. It should be applied in May or June.

NOXIOUS INSECTS.

It can not be denied that man has no enemy so great, so to be feared,—War, Pestilence, and Famine excepted,—as is presented in Insect life. Though as individuals, they seem unworthy of notice, yet in their aggregate they hold tremendous and awful possibilities.

To-day, preyed upon by thousands of birds and by themselves, subject to a multitude of destroying agencies, yet what a sway they hold over the destiny of man. With every fruit he plucks; with almost every vegetable he cultivates; with the grain of his fields, and the flocks of his pastures. He has to contend in some shape with destructive Insect life.

Let those providential agencies that hold

them in check, but once cease or partially so, and the angel of destruction would literally be let loose upon us.

Each year brings with it some new development of destructive Insect life. The older we grow, as a country, the greater become their ravages. Can too much attention and study be devoted to a subject that is so closely related to our interest.

Every means that tends to the destruction of our enemies should be carefully cherished.

I would here mention how last season I "flanked" a few specimens of Insects that sought to rob me of the rightful fruit of my labor. Discovering my currant bushes covered with worms, I gave them a sprinkling of water, and then a light dusting of *Cayenne Pepper*. The next morning found my bushes free. Finding my squash and cucumber vines infested by both the yellow bug and the large black one, I gave them a slight sprinkling of water, in which I soaked some cayenne pepper pods, and my vines were effectually cleared. They probably thought the seasoning too high, and sought a milder diet. I applied to roses and other things. invested with lice, with the best results. Where the remedy can be applied I deem it one of the best.

HORNET RASPBERRY.

There seems to be some difference of opinion about the hardiness of this variety. I have cultivated it without protection for four years, and since the first year has stood the winter well, better than Brinkles' Orange and some other varieties. In point of hardiness, I consider it equal to the varieties commonly in cultivation, and in size and flavor unsurpassed.

PLUM TREES.

In a yard, formerly the site of an old

ashery, stand several large and old Plum trees. The soil about them is composed largely of ashes, and on these plum trees there is no sign of black knot, and the fruit is always perfect, while all about them through the whole place, hardly a tree is to be found but what is affected. Why should these be exempt, but for the reason that the same cause that makes the fruit drop causes the knot, viz.: "The little Turk."

GRAPE CUTTINGS FROM HISTORY.—No. 4.

BY JOHN S. REID.

WE now come to examine the grape and wine culture of that most wonderful and learned people called the Greeks; and to report to a few of the modern Athenians the result acquired by them in the production of this glorious beverage. Time, which has destroyed empires and dynasties, levelled the marble columns of Athens and Corinth, prostrated the Ephesian Temple, and almost obliterated the birth and erection of the Pyramids, has dealt lightly with the "nectar of the gods"; and history has embalmed the perfume and strength of their choicest wines, so that one almost thinks, in conning over the musty pages of Grecian history, he scents the aroma of the Maronean and Lesbian wine.

But let us refresh our geography a little before we enter into the famous vineyards, and learn where this most wonderful country is situated, so that our readers may thoroughly understand the place as well as the latitude in which the "Islands of the Blest" are found.

Nestling on the bosom of the glorious Mediterranean, in lat. 36° to 40° are found the beautiful isles of Lesbos, Scios, Samos, Delos, Lemnos, Rhoda, Messina, Zante, and the Grecian main-land, where burning Sappho loved and sung.

The ancient wines most noted for their

superior qualities are the Maronean, the Chian, the Corinthian, the Cyprian, the Lesbian, the Ismarian, the Tæian, the Rhodian and the Leucadian. The Pramnian, the production of Attica, a red but sour wine, is reported as being somewhat like our Port, but more harsh and unpalatable; and such was some of the wines of Corinth and Sapa.

The islands of Crete, Cyprus, Rhodes, with the territory along the coast of Thrace, and Ismarus, produced excellent grapes and wine, chiefly of a white or amber color; except the Maronean, which was a black sweet wine, of which Homer writes with much delight, and drank it with as much pleasure. Some ancient writers prefer the wines of Chios and Thasos before all others, except the Clazomenian, the product of Ionia.

In strength, they far surpassed any of our modern wines, it requiring from three to twenty measures of water to reduce them and make them palatable for the feast. It is supposed that they were condensed to this state or degree of syrup or consistency by the process of "smoking" to which they were subjected. The manner in which this was done is this: a furnace or kiln was erected, named the amphoræ, where earthen vessels well glazed were placed, full of

wine, containing from four to ten gallons over the kiln, and kept there until the watery particles were chiefly evaporated; after which it would keep for ages.

The Greeks, it is said, were acquainted with more than fifty varieties of grapes; and they gave much attention to the culture of the vine, being acquainted with the best methods of cultivating this plant, as well as in the manufacture of the wine; and these have been handed down to us, differing very little from "our most improved method" of the present day. They were extremely fond of the odoriferous quality, and would often put in their must dough kneaded with honey, mixing with it aromatics, flowers and fruits; giving to each a separate aroma, so that on opening an old cask the odor of roses, violets, and other fragrant flowers, would fill the wine cellar, gratifying the sense of smell as well as the taste.

At the feast, it was not uncommon for the guests to mix the rich wines of Byblos, Erythræ and Lesbos, with the light wines of Heraclea and Mende. But it was not alone in the islands that wine of a superior quality was made, for the finest situations for vineyards abound on the slopes of the main-land, the Morca having formerly furnished the Malmsey and Malvasia grape, from which the sweet wines of Malaga, Madeira and other famous places obtain their name; and the islands of Candia and Cyprus, under the rule of Venice, when that republic was mistress of the Adriatic, supplied Europe with the choicest qualities and brands.

The relative strength of the ancient when compared with the modern wines is as follows:

Port,	25°.	Maronean,	40°.
Madeira,	22°.	Lesbian,	30°.
Sherry,	19°.	Rhodian,	26°.
Malaga,	18°.	Zante,	17°.

So that, when the *feast* was not of the Bacchanalian order, the guests usually mixed their pure wine with water, as two to five.

The climate and soil of Greece are highly favorable to the cultivation of the grape; and nothing more is wanting to produce wines of superior quality except that skillful mode of preparing the soil and vine. But at present the vineyards are kept in the worst condition; and the manufacture of the wine is a disgrace to that or any other country, the vintners mixing with it salt, water, pitch, resin and lime in such undue proportions as to destroy both its fine aroma and taste. Wherever the Turkish arms have entered, desolation has followed in their train, with wretchedness and apathy. The modern wines of Greece are of the sweet and aromatic order, whilst the red muscadine of Tenedos and white muscadine of Smyrna vie with the best Hungarian; yet the red wine of Itbaca once was preferred to either, whilst the vineyards of Rethymo and Kissanos rivalled the choicest Rhodian Cimmandaria.

Perhaps the Greeks of the present day may improve, under their own government, the horticulture of their fathers, and again make that beautiful archipelago the garden of the world; unless ages of bondage and misgovernment have broken their spirit, and destroyed their love for the improvement of their country.

Here was the birth place of philosophy of literature, of the arts and sciences; here Homer and Hesiod, the fathers of poetry and history, lived and flourished; here Socrates, and Plato, and Aristotle, and Xenophon, have enobled humanity; here too was the throne of Jupiter, the father and king of the gods, and all of the lesser deities; indeed, almost every thing is here that could wake up the dormant mind to action, and arouse the soul to become again what it was in the days of its early nationality, when Greece was the LIGHT of the world.

The ancient Greeks have a beautiful tradition concerning Minerva, that when Neptune and Minerva at one time contended about the name of a very famous city, said to have been built by Cecrops, it was re-

solved that whichever of these deities conferred the more excellent and useful gift on man should give their name to the new city.

Neptune brought a horse, and presented it as his gift; when Minerva instantly produced an olive out of the earth, and presented it as her choicest gift to man, when the assembly of the gods adjudged it to be the more useful; and the naming of the city was awarded to Minerva, who called it Athens, from her own Greek name. Thus horticulture was honored by the gods at that early day.

It is said that under Cecrops, 1600 years before Christ, the culture of the vine was brought into Greece, although Noah, as we have before shown, planted a vineyard 2350 years before Christ, on the slope of the Armenian Mount Ararat; and that from this source the vine has come, to Asia Minor, Palestine, Egypt, Greece, and Italy, of which country our next "Cuttings" will be.

HOME CUTTINGS.

I regret that this month my Home Cuttings are so valueless, for the frost of the

17th of May last *nipped* almost every vine, and laid low in dust my hopes and prospects for a grape crop for the present season.

My young vines were all seriously injured, and those *first* fruiting lost all their bloom. The Delaware, that I deemed hardy, equal to the Clinton, was cooked like a bean; so were all of the new varieties, Anna, Hartford, Herbemont, Union Village, Iona, Israella and Allen's Hybrid, but most of all my Page; the last was wholly destroyed. And now the excessive and continued rains have covered with mildew my old and larger Catawbas; so that I may say that, *this season*, my grape crop will be a complete failure.

On the day after the frost, I went to several small vineyards to examine their state, and found them *swept* every whit as bad as my own.

After such a splendid opening and showing in the spring, I regret the result of my examination, but must bear it with resignation, hoping for better luck next year, and a new variety *hardy* as the Clinton, and good in *quality* as the Delaware.

PLEASURE GROUNDS.—DESIGN, &c.

BY C. N. B.

THE increase of the inhabitants of our pleasure grounds within the last few years, places the taste and patronage which are bestowed on gardening in a very conspicuous point of view.

The style in which grounds are now usually laid out, may be characterised in one short sentence. "Convenience is endeavored to be rendered as attractive as possible, by combining it with the beautiful and appropriate." The convenience of the inmates of the mansion is studied by having the kitchen and fruit gardens near the house, fully extensive enough to supply all the wants, and kept in the appropriate beauty of order and neat-

ness, without any extravagant attempt by the mingling of useful trees, or planting its cabbages, etc. in waving lines. In the flower-garden which immediately joins the house, dry walks, shady ones for summer, and sheltered ones for the more intemperate seasons, are conveniently constructed.—There accompanying borders and parterres are in form, such as are most graceful, whilst their inhabitants distinguished for their fragrance are distributed in grateful abundance; and those noted for their elegant shapes and beautiful tints are grouped and blended as the taste of the painter and the harmony of colors dictate. The lawn from these glides insensibly into the more

distant ground occupied by the shrubberies and the park. Here the genius of the place dictates the arrangement of the levels and of the masses of trees and water. Common sense is followed in planting such trees only as are suited to the soil. A knowledge of the tints of their foliage guides the landscape gardener in associating them, and aids the laws of perspective in lengthening his distant sweep. If gentle undulations mark the surface, he leads water among the subdued diversities, and blends his trees in softened groups, so as to form light glades to harmonize with the other parts. If high and broken grounds have to be adorned, the design mingles waterfalls with darker masses of darker foliaged trees, and acquires the beauty peculiar to the abrupt and grand, as in the former he aimed at that which is secured by softer features.

DESIGN.—“Consult the genius of the place before you determine upon your design” is sound advice; for in gardening, as in all fine arts, nothing is pleasing that is inappropriate. “A plain, simple field,” says a writer of good authority, unadorned, but with the common rural appendages, is an agreeable opening; but if it is extremely small, neither a hay-stack, nor a cottage, nor a path, nor much less all of them together, will give it an air of reality. A harbor on an artificial lake is but a conceit; it raises no idea of refuge or security, for the lake does not suggest an idea of danger. It is detached from the large body of water, and yet in itself but a poor inconsiderable basin vainly affecting to mimic the majesty of the sea.

When imitative characters in gardening are egregiously defective in any material circumstances, the truth of the others exposes and aggregates the failure. But the art of gardening aspires to more than imitation; it can create original characters, and give expressions to the several scenes superior to any they can receive from illusions. Certain properties and certain dispositions of the objects of nature, are adapted to excite particular ideas and sen-

sations; they require no discernment, examination or discussion, but are obvious at a glance, and instantaneously distinguished by our feelings. Beauty alone is not so engaging as this species of character; the impressions it makes are more transient and less interesting; for it aims only at delighting the eye, but the other affects our sensibility. An assemblage of the most elegant forms in the happiest situation is to a degree indiscriminate, if they have not been selected and arranged with a design to produce certain expressions; an air of magnificence or simplicity, of cheerfulness, tranquility, or some other general character ought to pervade the whole; and objects pleasing in themselves, if they contradict that character, should therefore be excluded. Those which are only indifferent must sometimes make room for such as are more significant—may occasionally be recommended by it. Barrenness itself may be an acceptable circumstance in a spot dedicated to solitude and melancholy.

“He is no philosopher,” says a writer, “who neglects a certain present good for fear that in some future period it may be absurd; but in the encouragement of gardening, whilst an immediate good is obtained, there is no fear of its perversion in after days. Its diffusion among the poorer classes is an earnest or means of more important benefits, even than the present increase of their comfort. The laborer who possesses and delights in the garden appended to his cottage is generally among the most decent of his class, he is seldom a frequenter of the ale-house; and there are few who are so senseless as not readily to engage in its cultivation when convinced of the comforts and gain derived from it.

Gardening is a pursuit adapted alike to the gay and recluse, the man of pleasure, and the lover of science. To both it offers employment such as may suit their taste; all that can please by fragrance, by flavor, or by beauty; all that science may illustrate; employment for the chemist, the botanist, the physiologist, and the meteorologist.

There is no taste so perverse as that from it the gardener can win no attention, or to which it can afford no pleasure.' He who benefitted or promoted the happiness of mankind in the days of paganism, was invoked after death, and worshipped as a deity. In these days we should be as grateful as they were without being as extravagant in its demonstration; and if so, we

should indeed highly estimate those who have been the improvers of our horticulture; for, as an ancient writer says, "it is the source of health, strength, plenty, riches, and honest pleasures; it is amid its scenes and pursuits that life flows pure, the heart more calmly beats."

•Pokeepsie, June 1st, 1865.

THE NEW ERA IN GRAPE CULTURE—No. II.

BY GEORGE HUSMANN, HERMAN, MISSOURI.

As I am not exclusively writing for rich folks, (who can follow grape culture any how) but more especially for the poorer class; for those who have nothing but their willing hands and active brain to command grape culture with, I will now refer to a plan which has been followed with good results to both parties, the wealthy and the poor, and which we call here, "tenanting, or growing grapes and vines on shares." I will here also give my own experience.

Some eight years ago, I bought a piece of wild land at \$2 50 per acre, which, I thought and still think, is well adapted to grape culture. In 1861 I made the first beginning on it, and made a bargain with a poor but industrious emigrant of the following kind: I was to build him a small house, furnish the plants and trees, and pay him \$150 per year the first two years; he to do the labor, fencing, clearing of ground, planting, etc.; he to have one half of all the produce of all the vines and trees, and I to have the other half. This contract to last an indefinite length of time, until one of the parties should get tired of it, when he had to give the other six months' warning. No compensation to be allowed after the first two years, except one half of the produce. I built him a small but comfortable house, and my tenant went to work with a will.

The first spring he fenced, cleared and planted about three acres in grapes, and

four in orchard, mostly pears and peaches. Made during the summer, about \$250 worth of layers, of which he received one half, and raised corn and vegetables enough for his family. This, with the \$150 I paid him annually, enabled him to live with his family. The second summer he made about \$1000 worth of plants, of which he received one half again. The third summer the produce was about \$1600, making \$800 as his share; and the fourth year I have paid to him \$2600 as his share of the proceeds in plants and fruits; and if the rebels had not unfortunately emptied all of the wine, he would have had at least \$500 more. This, the fifth year, he will have at least \$6000 as his share of the proceeds, and it may be a thousand more. During that time he has sent money to his brother in Germany, to pay the passage for him and his family; has bought a piece of land joining mine, and leased it to his brother on about the same conditions under which he holds a lease from me, he preferring to remain a tenant on my land. The land, house, plants, and all have cost me, so far, about \$1800; net proceeds up to last spring, \$3,100. If we consider that these were the first four years, that in 1863-64 nearly all the buds on the vines were killed by the extreme hard winter, and that the rebels destroyed about \$500 worth of wine, it will be seen that we have both found it a profitable investment. It may be fair here to state,

that he and his family are of the most industrious, hard working, and intelligent people I have ever met, and that the greater part of this was made by raising plants of the best varieties. Not a cutting was wasted; and as I take all the plants he raises at a fair wholesale price, he has no further trouble in selling them. But, Messrs. Editors, here is an example of a man, entirely without means, making a comfortable living by grape growing the first few years, and he is now in a fair way of becoming wealthy in a few years, while the proprietor of the ground has every reason to be satisfied with the capital invested. Can not others go and do likewise? There are thousands of acres of the best grape lands to be had yet in this State, at the rate of from \$5 to \$10 an acre.

Has there ever been a better opening for the poor industrious laborer than he can have in Missouri now? I have lately bought some 500 acres of splendid grape lands, at an average of \$5 50 per acre, and am ready and willing to welcome a dozen of industrious families to go to work on them—others will do the same. Rest as-

sured they can soon earn enough to buy land of their own if they choose. Now, that we have perfect peace and quiet again, we look forward to a flood of emigration; and it will come. It will not be long before land will rise to treble its value now; flourishing farms and vineyards will be where every thing is wilderness yet; and oh! most glorious thought of all, they will be worked by *free* and happy people.

Fruits of all kinds look most promising. We have had a most abundant crop of cherries and strawberries, plenty of pears, peaches, and apples, and as to grapes, there never was such a prospect. The trellis is fairly groaning under the load of fruit, and our coopers have to work day and night almost, to prepare the multitude of casks which will be wanted to receive the noble grape juice.

To those of our Eastern brethren, who wish to try their fortunes West, we offer a kind invitation to come and judge for themselves. They may rest assured of a hearty welcome.

HERMANN, Mo., June 22d, 1865.

MORE NEGLECTED FLOWERS.

BY J. M. MERRICK, JR.—WALPOLE, MASS.

I wish to call the attention of the HORTICULTURIST readers to three or four plants natives of the northern States, and now (May 19) in blossom, which have never been promoted to the dignity of garden culture, although they fully deserve that honor.

I mention first the *HOUSTONIA* (*Oldenlandia Cærulea*), a well known delicate little plant, with bluish white flowers with yellow centre, in blossom from May to August, chiefly to observe that it would form a very pretty contrast if grown with the dwarf *Polygala*, which is about the same height, and blossoms at the same time.

POLYGALA PAUCIFOLIA. This pretty plant grows in every wood and pasture, sending

up from a running root stock slender few-leaved stems, bearing flowers of the most exquisite purple, tipped with white. A single blossom is not very striking; but a bed, or a well rounded bouquet, such as I have before me while writing, is very effective.

A beautiful plant, confined, so far as my experience goes, to a very few localities, is the *CORYDALIS AUREA*. The only place where I have found it is but a few square feet in extent, although I am told it occurs in Roxbury, in this State. Belonging to the same family as the *Dielytra* (the *Tumariacæ*); it resembles that plant in foliage, but differs from it in its blossoms, which are

red, orange, and pink, and are produced in great profusion from the middle of May till late in June. My plants are in full flower, and have been so for three weeks. It is a biennial, growing readily from seed, and is very ornamental.

As a companion for the Lily of the Valley, I venture to suggest the *DRACENA BOREALIS*, a very handsome plant, fond of damp soils, and flourishing best when its roots are actually wet all the time. From its three or four broad base leaves, it sends up a scape from six to eighteen inches high, crowned with an umbel of five or six delicate yellowish green lily-like flowers, succeeded by an oval berry of a bright and noticeable blue. It usually blossoms in June, and its berries are conspicuous till September. This year it is in full bloom in the middle of May, and I have plants under cultivation, removed while in full bud, with perfect success.

I have never met with any cultivator, myself excepted, who has taken pains to transplant the Indian Turnip, *ARISEMA TRIPHYLLUM*, from the woods to his garden; but a plant so curious and so easily cultivated deserves a place in every collection where there is a foot or two of damp and shaded soil to spare. Under favorable conditions the *Arum* grows to a monstrous size. I saw specimens last year that were three feet and more in height. It is a perennial, grows from a corn, and is easily transplanted.

If the reader's garden has a swampy, boggy spot, shaded and unfit for most garden plants, let him transplant from the woods the *SARRACENIA PURPUREA*, and try his luck with the most curious production of nature our swamps afford. It is hard to say which are more striking, the pitcher shaped leaves of this plant, almost always half full of water, or its odd, upside down blossoms, unlike anything else in the world. I have transplanted it in bud, and kept it growing in a pot for some time, by cutting off half the leaves; but it needs its native habitat for perfect development, and is rather impatient of removal.

The *CALYPSO BOREALIS*, whose flowering season has now gone by, would be a great treasure if it were not so very rare; but I have never seen it, nor have I seen any one who has been successful enough to find it in this part of the State.

A rich, shady cedar swamp affords the botanist, who has his eyes open, a fine chance to collect rare and curious flowers.

I could take the reader to one where, without stirring, from his standing place, he could gather all the plants mentioned above, except the *Corydalis*, and besides these the *Bellwort*, *Smilacina*, *Orientalis*, and *Golden Thread*; while a walk of a few steps would bring him to the *Corydalis*, and a few weeks later to the *Calopogon*, and various kinds of orchis. Of these, and later flowers, I may speak in a future article.

THE ACTION OF METALLIC SALTS UPON THE GROWTH OF PLANTS.

BY J. M. MERRICK, JR.—WALPOLE, MASS.

Several years ago, when I was assistant to Professor Horsford, the professor of Chemistry in Harvard University, he was consulted by one of the parties to an important lawsuit, where chemical principles were largely involved; and where the main question turned upon the action of copper fumes and scoræ on vegetation. We made many hundreds of analyses of soil, grass, bark, and moss from the neighborhood of

the Copper works, and finding copper everywhere, we undertook experiments in watering plants with solutions of copper, arsenic, and other metals injurious to their growth. Having kept no minutes of these experiments for my private use, this summer, I made the investigation in poisoning plants, which are given in the following pages.

A solution of sulphate of iron, of eight grammes for the half litre, was taken as a

standard, and solutions of acetate of lead, chloride of tin, sulphate of zinc, sulphate of manganese, sulphate of copper, and bi-chloride of mercury were made, of such strength that equal measures, should contain equivalent (*not* equal) quantities of the respective metallic bases.

Seven *Triomphe de Gand* strawberry plants, as near alike as possible, and seven small cauliflower plants, were transplanted into pots of uniform size, and, beginning on the first day of June, each plant was treated with fifteen centimetres of the above named solutions per day, and all the plants were watered with clear water twice a week. The following are the results:

1st. Strawberry plants subjected to the action of acetate of lead, no change till

June 10—Slight blackness on stems.

" 17—Stems a little decayed.

" 23—Two large, and one small leaf remaining.

July 2d—Two half healthy leaves left.

Cauliflower with acetate of lead, seemed wholly unaffected.

July 2d—Strong and growing.

2d. Strawberry treated with chloride of tin, no change noticeable till

June 9—Stems blackened.

" 17—Stems decaying.

" 21—Stems more decayed.

" 30—Entirely dead.

Cauliflower plant treated with chloride of tin in perfect health, July 2nd.

3rd. Strawberry plant treated with sulphate of zinc, no change noticeable till

June 10—Stems blackened.

" 17—Outer leaves gone.

" 23—One leaf remaining.

" 25—Entirely dead.

Cauliflower treated with sulphate of zinc: no change noticed till

June 23—Leaves shrivelled.

July 2d—Entirely dead, having decayed rapidly.

4th. Strawberry plant treated with sulphate of iron, no change observed until

June 10—Stem show slight decay.

" 17—Outer leaves going.

June 22—Leaves black and decaying.

" 30—Entirely dead.

Cauliflower plant treated with sulphate of iron.

July 2d—Leaves slightly shrivelled, otherwise healthy.

5th. Strawberry plant treated with sulphate of manganese, no change perceptible till

June 11—Slight blackness on stems.

" 16—Apparently healthy.

" 23—Several leaves dead.

" 30—Two healthy leaves left.

Cauliflower plant with sulphate of manganese, unchanged till

June 23—Leaves shrivelled.

July 2d—Leaves badly shrivelled.

6th. Strawberry plant with sulphate of copper, unchanged till

June 10—Stems decaying.

" 23—Three leaves remaining.

" 29—Entirely dead.

Cauliflower plant with sulphate of copper unchanged till

June 23—Considerable decay.

" 30—Rapid decay, almost dead.

7th. Strawberry plant with chloride of mercury, no change perceptible until

June 7—Stems blackened.

" 11—Stems rapidly decaying.

" 17—Outer leaves dead.

" 19—Whole plant entirely dead.

Cauliflower plant with chloride of mercury, no change observed until

June 17—Somewhat affected.

" 25—Badly decayed.

" 28—Entirely dead.

These experiments are interesting from one point of view as shown how much better cauliflower plants can resist poisonous agencies, than strawberries, and what is true of the cauliflower will probably hold true of all plants of its class.

The action of the corrosive sublimate was most rapid, as may have been foreseen, but how a cauliflower can *grow* when daily watered with a strong solution of sugar of lead is mysterious.

The action of the iron and copper salts

were about the same, although it might have been supposed that copper would act more energetically than iron.

The first signs of decay were blackening of the stems, then the stems wilted, and last of all the leaves shrivelled. The base of the stem in all cases was affected first. The roots were black and dead. I trust

some reader of the HORTICULTURIST will continue these experiments on other plants, and give us his results. I should suggest the use of weaker solutions, so that the experiments might occupy a longer time, and slighter changes in the health of the plants be noticed.

NOTES ON THE JULY NUMBER.

PRUNING PEAR-TREES.—As remarked by the Editor, this is a matter more preached upon than correctly practised; and the article copied is perhaps the best instruction yet in print. Nevertheless, is there not an error in M. Du Breuil, so far as the time of first pruning? He says: "Do not prune the first season after planting." Now, we find that all our young trees, when obtained from the nurseryman, come with mutilated roots; and, if we leave all the buds or top without cutting back, we have a puny weakly growth, and often death in August. But, if we cut back our tree from eight to twelve inches, from the insertion of the bud, when the roots start, two to four buds push vigorously. These, if managed and pinched back in early July, will give by the last of September a good formed bush, on which to work next year. I have recently had an examination of some proof sheets on this subject, now in press by the Ohio State Board of Agriculture, written by F. R. Elliott, of Cleveland. The matter is there treated in a plain, practical way, carefully and elaborately illustrated for the use of the uninitiated.

LACKLAND'S GARDENER.—Our Edgewood friend has given us an account of Lackland's gardener which is a literal record of every day experience. In summing up, however, he does not despair of his friend, but expects yet to see him grow verbenas, &c., although his cabbages have died. Judging from our experience, Lackland obtained more for his money than most amateur men

do who hire what are termed "gardeners." But, so long as our Petroleum and Shoddy Aristocracy will *pay* for *gardeners* who have had charge of the Duke Buccleugh's place, and astonished the old country with their skill, so long as men who hire will pay more for impudence than brains, just so long the common laboring man, willing to do what is told him to do, will continue to be the best and cheapest gardener. To extend this a little, it has become common, for men having made a little money, to hire a gardener, build green and forcing houses, &c., and, instead of employing skillful men who have made the matter a study, give the subject of construction of these houses to the gardener and joiner, and the arrangement of the grounds, grouping of trees, &c., exclusively to the so called gardener. Criticism is an unpleasant item of performance relative to any production; but when that production is one designed to be permanent and to meet the eye of cultivated taste, as in the designing of residences and the arrangement of roads, trees, &c., surrounding, he who plays the critic must expect sharp points to reach him from every side. But, at the risk of these points, let us say that we do not think five per cent. of the so-called "gentlemen's places" will bear correct criticism, and all because they have preferred to use their own and their gardener's judgment rather than employ one who, having made the whole matter a study, gives drawings before his work, and a reason to each item and position connected with the work.

HINTS TO ORNAMENTAL PLANTERS.—I wish every man, from Maine to California, would read and heed this article. As the writer says, "a smooth carpet of grass, a few choice trees and shrubs, &c., will commend themselves to every eye."

COOL TREATMENT OF ORCHIDS.—One of the best articles on this subject. The suggestion of the writer, however, that our clear skies and suns are not the same as in England is worth careful thought ere the amateur expends much of time or money on growing orchids in a house with grapes; but I should like much to find success the rule rather than the exception.

CULTURE OF THE ROSE.—A plain practical article that alone is worth to the uninitiated Rose grower more than the cost of the Journal a year. It is such records of practice and detail of culture that make the *HORTICULTURIST* peculiarly valuable. Let us hope they will be continued.

RAISING HYBRID AND SEEDLING GRAPES.—Mr. Campbell's experience on this point, and as here recorded, is of great value as a guide to farther progress. He says that with all his seedlings, he does not yet feel that he has acquired a grape that will take the place of kinds now known, and yet to our knowledge he has grown many hundreds. Truly this growing of a superior fruit from seed is rather an up-hill work. It is well we have enthusiasts in fruit culture, men who care more for the enjoyment obtained in the prosecution of these labors than for the money value predicated thereon. Within a week of our present writing we have examined over two hundred seedlings, mostly crosses, in which Delaware acted as one of the parents; but, like Mr. Campbell, we may continue to work and *hope*, the result sought for has not yet appeared.

THE WREN.—A well-written plea for

one of our most deserving and, by us, cherished songsters. It is not, however, the Wren alone that should be protected and a habitation provided; but the Robin, Lark, &c., deserve the attention of all residents of the country, not alone for their musical songs, but for their practical labors in preventing the increase of insects. A friend of mine claims that the common Barn Swallow, by eating of the fly, prevents the Slug, commonly called Pear or Cherry Slug, from doing any injury to his trees, while half a mile from him, and where the Swallow does not brood, the insect is abundant.

EVERGREENS.—The writer is correct in advising us to stick to our old and well tried friends the Norway Spruces, Hemlocks, &c. He says when a pine grows long and spindling, cut off the leader, &c., but he does not tell us when to do it. In my experience, I have found that all evergreens will bear cutting back; but it is only within a few years that I have practised cutting when just about half the growth has been made, in the spring. If cut at that time, I find they form strong side buds, and the next season beautiful thick heads, while if cut before growth, often it takes two or more years ere the cutting back is clearly healed and the form well established.

LETTER TO COUSIN SELINA. This letter recalls to my mind the proposal, some few years since, to build large green houses in the Central Park. Pray tell us, Messrs. Commissioners, why have they not been built? Surely, New York, as a city, was never more prosperous; surely there cannot have been any want of money for the purpose; nor, with all the taxes now levied, do we believe there is a resident of the city who would be unwilling to add a little more if he knew it would be judiciously expended in forming an elegant winter public garden.

REUBEN.

ERRATA.—The first form containing our leader slipped through our hands before the proof was duly corrected, we have consequently been annoyed at finding, in the first column, on page 246, a serious error, which we here correct. Instead of "12 inches from their starting point," read *one inch*. We would also add, that the article has intentionally been translated as literally as possible, in order to follow the author word for word in all his instructions. This will account for its peculiarity of style.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

WODENETHE, Fishkill on Hudson,
15th June, 1865.

MESSRS. WOODWARD.

DEAR SIRS: I enclose you herewith a letter from Mr. Hunnewell, of Wellesley, near Boston, the finest place in Massachusetts, describing three or four of the most prominent places in England, which I think would prove very interesting to a good many of your readers, especially those who are inclined to the cultivation of the new est evergreens.

Truly yours, HENRY W. SARGENT.

* * * * Liverpool, 21st May, '65.

I have thought of you a great deal lately, having experienced a "sensation" week in a horticultural way, somewhat similar to the political one you described. We have been to see some of the show places I had hoped to visit with you, such as Elvaston Castle, Alton Towers, Chatsworth, Trentham, &c., which have afforded me much gratification, as you may suppose. I was much surprised and disappointed though, to find some of them quite run out, such as the two first, which are shockingly neglected, though they do say Elvaston will be restored soon, as the present Earl will become of age, and, having some taste for country life, will make his entrée to the estate through the gilded gate, burn a yew log, and have a state dinner in the grand banquetting hall, which we saw, as likewise Miss Foote's (of buy a broom's notoriety) chamber, looking out on to that famous Italian garden, as it is represented in the "Gardens of England," and which is really a great wonder, the topiary work exceeding even my most sanguine expectations.

It is all executed with the Yew, except the covered walk with the little loopholes, as they appear in the sketch, which to my surprise I found was of arbor vitæ, thickened at the bottom with box. It is very curious and quite successful. This Italian garden is the only part of the place kept up; but that is no small job, as there is a great quantity of clipping done; and the trees are so tall that they are obliged to have as much scaffolding to reach them as would be necessary to gild the Boston State House cupola. There are half a dozen yew arbors with enormous peacocks on top of them, pedestals with crowns capitally executed, trees trimmed up ten to fifteen feet high in a circular form, and the tops then allowed to throw out their branches; and then in the back ground two great columns resembling very much the column in the Place Vendôme; they were so high. Most of the Araucarias here in this garden, and all over the place, were killed four years ago, making bad work in their calculations. But the *evergreen feature* is decidedly overdone, and makes the place very dismal and gloomy, especially as every avenue and path are lined with the Irish Yews; and there is but one spot in one hundred and ten acres where a deciduous tree is to be seen! Even the great avenue, two to three hundred feet wide, with a view seven miles distant, has an inside row of those upright growing Yews. The greatest curiosities are some enormous Golden Yews, as much as sixty feet or more in circumference, and lots of splendid Douglas Firs, the finest trees in the place. There were many large pinus cembras, but only middling sized specimens of Pinsapos, Nobillis, Deodars, &c. I must not

forget though a Weeping Ash grafted forty feet high, which will be a curiosity indeed one of these days.

I saw the machine referred to by Mr. Barron in his book, who remains on the place, though he has given it no attention for a dozen years or more, being allowed only a small sum of money for expenditures; so he has been busy in preparing a nursery close by, and is going into that business.

Alton Towers, the Earl of Shrewsbury's is also very much neglected, no attention being paid to the grounds round the castle, which he cannot afford to inhabit. But the gardens are mostly in a valley, one side of which is principally covered with masses of Rhododendrons, showing off to great advantage on the side hill; but a great proportion, here as elsewhere, are Ponticœms, the cultivation of which Waterer tells he has given up; they are so inferior to the catawbienses varieties.

Chatsworth I was disappointed in. The house is situated rather low, not comparing with Eton Hall or many other Italian palaces we have seen. The park, though grand, has not an evergreen tree in it. The rock work, composed of square blocks, is too artificial, and altogether it did not come up to expectations.

Trentham offers greater attractions than almost any other place, being on a grand scale, and in fine keeping in every respect. But I noticed very few novelties in the way of trees or shrubs. We could not get into the house; but it has a noble appearance, and comes up to one's ideas of a Ducal residence; it is on low ground, though as usual, with limited views, but has a fine sheet of water in front.

One of the most interesting places I have seen has been Mr. Bateman's at Congleton, who figures in the "Gardener's Chronicle" frequently, you may have noticed. He has no park; and at first sight I thought I had been caught on a wild goose chase, the house being within fifty feet of the road, on low ground, with a great furnace chimney by the side of it as tall as a Manchester factory.

But the garden, though small, has the greatest collection of novelties of every kind imaginable in prime order, and all in the finest keeping. You have rock work, stump work, Italian gardens, Chinese gardens and Egyptian, all admirably carried out with appropriate plants. But the greatest attraction is an evergreen avenue of some fifteen years growth treated in the most novel and admirable manner, which would make you open your eyes wide, for there is nothing to be compared to it in the great crack places. It has raised irregular borders planted with great judgment and taste with all the new varieties of trees and choice specimens of shrubs, the Rhododendrons, so full of blossoms that they are obliged to thin them out; so says the gardener, who breaks off the old faded blossoms before they go to seed. Here, as at many other places, it seems to be the habit to charge an admission fee for the benefit of some charitable society, a pretty good idea, as you get rid in that way of many loafers and undesirable visitors. You had better try it.

Before leaving London we went one day to Hampton Court, and saw the grand avenue of Chestnut trees just as they were in full bloom; five rows of magnificent old trees on each side; one hundred and sixteen in a row; the two inner ones of Chestnuts, and the other eight Lindens. A great sight indeed! We also went to the Royal Horticultural Society Gardens, and saw sixty thousand tulips in bloom. Just outside the main enclosure I spied a great lot of Rhododendrons, which I found on inquiry belonged to Waterer, who was planting them out for the great exhibition. So I went up and introduced myself. He is a fat chunky looking Englishman, received me very cordially, and we had a long chat together, he having a great deal to say about a *Mr. Sargent*, whom he expects to bloom this year in perfection! He had three thousand plants there he said brought up from his nursery, twenty-five miles distant, in teams, with large balls of earth, of course. The names of every one he knew, though they had no

labels and were not in blossom. The place for the exhibition is a great pit sunk down a dozen or fifteen feet, with the plants arranged on the sides, terracc like; so they show to great advantage; the whole to be covered, when in bloom, with a great tent. They will be in their prime in a few days, when I hope to see them, as also the nursery.

IONE VALLEY, CAL., June 8th, 1865.

This climate admits of the widest range for fruits, flowers and vegetable products of most all kinds.

We have the Fan Palm and Pomegranate growing successfully in the open air. We are raising Oranges and Olives. We know not yet what our soil and climate will produce, nor the extremes of vegetable products which may yet here be brought to harmonize in our great variety of climate and soil.

We can begin on the San Joaquin River, with its tropical climate, (barring the rains) and ascend to the eternal snows of the Sierras. For grapes, we have all varieties of soil and climate, so as when properly understood, we can have wines superior in flavor, of all kinds, and cheaper than adulterated. With the remaining fruits, we combine Maine and Florida, and some parts, I have no doubt, of the Isthmus.

Yours, respectfully,

CARLOS W. SHANE.

BROOKLYN, N. Y., July 6, 1865.

EDITORS OF THE HORTICULTURIST:

Gentlemen,—We of the city are often regaled with the fine stories of what this man or that man has done upon one, two or three acres; for instance, we hear of a man receiving for the fruit plucked from his $2\frac{1}{2}$ acre field of Blackberries, a sum equal to \$1100 a year. Again we hear of \$1500 an acre from Grapes. At another time we hear of \$600 to the acre for Strawberries, and \$1000 to the acre for Cabbage, Lettuce and Celery.

Just now there is a great rage for ten acre fruit farms, and I am curious to know how a farm of that size can be so disposed as to yield the largest income, by devoting $\frac{1}{2}$ to $\frac{2}{3}$ to fruits and the rest to vegetables.

I would respectfully submit the following estimate to you, and ask whether a father and son, with the help of a hired man, can so cultivate ten acres carefully and with liberal manuring, as to yield the following sums? If any of your readers can do better, I would like to have them record their opinions in your corresponding columns.

TEN ACRES.

	Yearly revenue.
$2\frac{1}{2}$ acres to Strawberries.....	\$700 00
$2\frac{1}{2}$ " Blackberries.....	700 00
$\frac{1}{2}$ " Grapes, Hartford prolif.	250 00
$\frac{1}{2}$ " " Concord.....	250 00
$\frac{1}{2}$ " " Delaware.....	250 00
$\frac{1}{2}$ " Horse Radish.....	200 00
$\frac{1}{2}$ " Asparagus.....	100 00
$\frac{1}{2}$ " Lettuce, Cabbage, Celery.....	300 00
$\frac{1}{2}$ " Rhubarb and late Cabbage.....	300 00
$\frac{1}{2}$ " Onions.....	200 00
$\frac{1}{2}$ " Sweet Corn and early Potatoes.....	75 00
$\frac{1}{2}$ " garden vegetables, such as Melons, Lima Beans, Tomatoes, Cauliflowers, Beets, Carrots, Turnips, Parsnips, &c.....	100 00
Total Revenue.....	\$3,425 00

I should think that every expense, such as manure, hired labor, expense of sending to market, and keeping of horse from the spring to the fall seasons might be included within the \$925, leaving the snug little profit of \$2,500. Are my estimates too high? if so, please set me right.

Yours, Horticulturally,

H. T. WILLIAMS.

MESSRS. EDITORS,

The annual June Exhibition of the Newburgh Bay Horticultural Society has just

taken place; and I learn from the Treasurer that the receipts this year exceed that of last season forty-four per cent., encouraging to its gentlemanly and energetic managers, who eminently deserve success for their hopefulness and perseverance. *Failure* is not in their vocabulary.

As this Society in all its particulars is a Newburgh institution, as it does very much to refine and exalt true taste, it is to be regretted that many wealthy citizens, who spare neither money or exertion to appear tasteful and refined, should neglect or refuse to extend to it the patronage of a single dollar for membership, or the paltry quarter for a season's visit to its attractive exhibitions of choice fruits and flowers; this too in contrast with the visits made to People's Hall from far distant parts of the State, and from neighboring States, to enjoy the fine display, not to be found elsewhere.

Although Newburgh is honored in the exhibition, yet it is mainly indebted to the adjacent towns for its most liberal supplies, many of which were gifts to the Society. All honor to Fishkill, Cornwall and Plattekill.

The premiums offered were very liberal; but we understand that only about half the amount was called for, thus showing that the exhibitors were as anxious to get up a fine show as to draw the prizes. Indeed, one of the prizes, the best basket of flowers, was not competed for, although several were on exhibition, among which were three splendid ones from Cornwall, simply labeled with the names of the lady contributors. The prizes were offered for the largest and best collection of Roses, 1st and 2d, Hybrid perpetual Roses, Bourbon Roses, Tea Roses, Hardy June Roses, Moss Roses; for the best three Roses of any variety; Herbaceous Pœonies, Lilies, Sweet Williams, Carnations, Pinks, Iris, Pansies, cut flowers, baskets of flowers, large bouquet for vase or parlor, hand bouquets, wreath of flowers, pot plants; for the best general collection of green-house plants; for the best general collection of stove plants; for the best five distinct named varieties of

Fuchsias; for the best six varieties of Achimenes; for the best six varieties of Gloxinias; for the best six varieties of Pelargoniums.

Fruits.—For the best and largest collection of Strawberries; for the best three varieties; for the best *Triomphe-de-Gand*; for the best Russell's Prolific; for the best quart of any variety; for the best three varieties of Cherries; for the best quart of any variety of Cherries; for the best plate of Raspberries; for the best specimen of Muskmelons.

Vegetables.—For the best Asparagus, Cauliflower, Cucumbers (under glass), Lettuce, Peas, Rhubarb, Potatoes, Beans and Tomatoes.

The show was splendid and tastefully arranged. Our limits will not admit of particular mention of individual exhibitors, or the names of those who took the premiums; but we cannot forbear to give great praise to the parties who got up and sustained the fair, so creditable to all. We wish every county in the State could make a similar exhibition; and when next the Newburgh Bay Horticultural Society exhibit, "may we be there to see." We learn that their grand, full exhibition of Fruits, Apples, Pears, Grapes (under glass, and Hardy Native), Peaches, Nectarines, Plums, Quinces, Muskmelons, Watermelons, Vegetables and Flowers of every variety, will come off on 27th, 28th and 29th September next, and will probably be the very finest display of the kind ever seen in this country.

ADMIRER.

Newburgh, June 20th, 1865.

Rose Bugs.—For several years past every effort of mine has failed to save my Grapes from the ravages of the rose bugs.

Last year I resolved, regardless of time and trouble, to keep my vines clear of this pest by going over and destroying them two or three times a day, which I did do most thoroughly. The result was, I saved only fifteen or twenty imperfect bunches on vines that should have produced many

hundreds. Last year my wife having saved some of her rose-buds by paper bags, I concluded I would this year try them on my grapes. Before the bugs made their appearance I prepared some 600 small bags from old newspapers. On the first bugs showing themselves I slipped one of these bags over the grape stem (then just forming, but not yet in blossom) and gathered it up close to the vine, securing it with a string.

This proved a perfect success. I have now on my vines nearly 600 as perfect bunches as one would wish to see. Of many hundred bunches left uncovered, I do not think a single grape escaped the bugs.

The bags were about two by five inches. I put on quite a number of larger bags to hold the branch and several bunches. All these failed, as none were saved where leaves were tied up in the bags, as the grapes blasted in process of blooming. Most of the large and few of the small bags were torn, in two very hard wind and rain storms. Fearing the grapes might injure by remaining too long in the bags, I took them off as soon as I thought they were safe from the bugs; but in the hurry of the operation quite a number were overlooked, and as these burst their way out, they not only showed no damage by their long imprisonment, but the grapes are larger than those first removed from the bags. The rose bug seldom attack the grape after it is set, but only the blossom; though they are often quite destructive to Apples, Peaches, and Cherries.

Burlington, N. J., July 3, 1865.

G.

LILIUM AURATUM.—We were shown lately at the store of Messrs. Henderson & Fleming, 67 Nassau St., magnificent blooms of this superb new lily: They were grown by Mr. John Dingwall of Albany, and far exceed in size (measuring nearly eight inches in diameter,) any of the illustrations of this flower that have come to our notice.

The great beauty of this lily—its perfect hardiness, delightful fragrance, and the ease of its culture, must recommend it to all lovers of flowers, and we hope to see it generally disseminated.

Mr. Dingwall also exhibits a new lily without name, received among other bulbs from Japan. It resembles in form the old Turk's cap. Color yellow, with brown spots finely perfumed. This we think a decided acquisition to the lily tribe.

SEYMOUR'S PATENT TREE PROTECTOR.—This is a contrivance manufactured by P. & F. Corbin, New Britain, Conn., to prevent insects from ascending the bark of trees, and consists of a circular iron trough protected from the weather, and placed around the trunk. This trough being filled with oil arrests the progress of all insects that do not fly. They are very neatly made of cast iron, japanned, and of all sizes that may be required, and can be easily applied by any one. We should think they would fully answer the purpose for which they are intended.

THE WILSON EARLY BLACKBERRY.—We received, July 12th, one quart of this Blackberry from John S. Collins of Moorestown, New Jersey, which were showy and in fine eating condition. It is said to be a valuable and distinct variety; as good a grower and more productive than the New Rochelle, ripening 5 to 10 days earlier.

AMERICAN HORTICULTURAL REGISTER.—We call the attention of our readers to the advertisement of W. C. Flagg, Secretary of the Illinois State Horticultural Society, Alton, Illinois. All engaged in business as nurserymen, fruit growers, dealers, agents, &c., are invited to send early, prompt and correct information, for the purpose of compiling the American Horticultural Register. This is a work that promises to be of great value to the trade and others; and we hope all interested will respond fully.

THE HORTICULTURIST.

VOL. XX.....SEPTEMBER, 1865.....NO. CCXXXI.

THE NATURAL AGENTS OF VEGETATION.

(FROM THE FRENCH OF DU BREUIL.)

WE understand by the natural agents of vegetation, those which facilitate, and often even entirely determine the different phenomena which take place in the life of plants. These agents are particularly the *soil*, *water*, the *atmosphere*, *light*, and *temperature*.

(We translate what relates to the following three, viz:—)

WATER, AIR, LIGHT.

Water—The nutritive agent, which, next to the soil itself, plays the most important part in the role of vegetation is, most assuredly water. We speak here only of its general action during vegetation.

Water is found in the soil, in the liquid state, and in the atmosphere, in the state of gaseous vapor.

If water was not in the ground in a liquid state, the latter would be wanting in the essential qualities of vegetation. It is only in a state of solution in water, or in a gaseous condition that the nutritive matters contained in the soil can enter into the organism of plants.

The office of liquid water is not limited to the solution of nutritious matter; it serves further under the name of sap to carry this nutriment into various parts of a tree, or to promote new growth.

This explains why certain lands, exposed to drought, although containing a fair proportion of good pasture, yield a vegetation less abundant and less vigorous than other lands not so rich in nutritive matter, but possessing a greater degree of moisture. It explains moreover that period of the cessation of vegetation observed towards the middle of the summer, at the time when soils exposed to drouth, are in part dried out by the vegetation and the evaporation going on since the spring time. At this period vegetation completely ceases, to recommence again with new vigor as soon as the first rains of autumn have moistened the ground. In view of this, you readily perceive the effects of a deficiency of water on vegetation. If the dryness of the soil is not very great, there only results less

vigor in the vegetation, and a larger number of flowers for the following year. If the drouth is more intense, and particularly if of protracted duration, vegetation is suspended; there is no further development; the leaves fade, turn yellow, and fall. And in fine if it becomes excessive, the tree dries up and dies.

The only means to be employed to prevent the too great drying up of the soil, are waterings, coverings, and dressings with the hoe or plough.

An excess of water in the soil is not less injurious than drouth. In a soil in which moisture abounds, vegetation is very rapid; the wood is of bad quality, because it is always too soft; fruit trees produce fewer flowers, and in consequence less fruit; and this is of poor flavor, and keeps badly. But if the water becomes stagnant and covers the roots, the consequences are yet more serious. The roots deprived of a free contact with the air, can no longer fulfill their functions; they rot and the tree dies. Running water is productive of less evil than stagnant water, because the former contains always a certain amount of air.

Certain soils endure this excess of dryness or moisture better than others.

Water in the state of vapor in the atmosphere is no less useful to vegetation than that which the soil contains in a liquid shape. These watery vapors are absorbed by the leaves, which in this way come to the aid of the roots in restoring to the plant the losses incurred by evaporation. What seems most remarkable is, that this absorption of the watery vapor by the leaves, takes place most freely when the roots, occupying a soil too dry, with difficulty can perform their functions. By a wise provision of nature, it is precisely at the time when the plants have the greatest need of moisture that it is most abundantly dispensed in the atmosphere; and this is due to the action of the sun which raises the vapor from the surface of the earth,—thus the cause of the one producing the other,—both the drouth and the moisture.

A too humid atmosphere is equally not wanting in difficulties in the way of vegetation. Thus, when the vapors, condensed and brought together by a falling temperature, occur in the form of fogs, and these last for any length of time during the spring, at the time of the flowering of the fruit trees, there results great damage. These fogs settle in little drops on the anthers of the stamens; particles of the pollen are broken off before it has the chance of being thrown upon the stigmas; the fecundation is rendered thereby null, and the flowers fade and fall.

Air.—The influence of the air upon the growth of plants is due to the oxygen and carbonic acid gases which enter into its composition. What we have said above on the subject of nutrition renders superfluous any remarks upon the action of the fluid atmosphere and of its elements.

Light.—This is no less indispensable to vegetation. We have seen that it is light which produces the phenomena of nutrition in plants. It is this which regulates the suction and the absorption by the roots. It is also by its agency that the decomposition of carbonic acid gas takes place through all the green parts of the plants; a decomposition by means of which the carbon becomes free and in a state of minute division, is easily assimilated by the plants, and tends to the growth of their several parts. It is also to this agent that is due the watery transpiration on the surface of the leaves; a phenomena which enables the sap of the roots to free itself from its superfluous water and to be transformed into cambium.

When you wish to preserve fresh cuttings from a plant, your first care is to place them in the dark, so as to lessen the transpiration of water. This is a fact well known to florists when they wish to preserve their flowers from wilting, and to gardeners when they wish to transport buds to a distance.

It is also the influence of light which regulates in the leaves the formation of

juices which give the plants their particular flavor and perfume.

In short, the green color, so abundantly spread among plants, and the particular colors which distinguish each of their parts, are likewise due to the light, by means of which the cells of the flowers, of the fruit, and of the leaves modify diversely the fluids they contain and produce their various hues of color. A single experiment will suffice to verify the facts we have above stated.

If you place a plant of any kind in a place perfectly dark, it will continue to grow, but the new growth will show in its tissue but a very small quantity of carbon, because the carbonic acid gas not being decomposed, the carbon could not be fixed there. The watery transpiration no longer taking place, these tissues become engorged with a large quantity of watery fluids. It then results that these parts remain always soft and herbaceous; besides they do not show the green color which characterizes tissues grown in the light, and they will remain a yellowish white. In short, always insipid, they will develop neither the perfume nor the flavor which distinguish the species to which they belong. This last phenomena is especially remarkable in the instance of the wild chicory, which green, is of an intolerable bitter, and which bleached in the dark and in that condition known as "The Capuchin's beard," becomes almost entirely tasteless. Plants developed under such circumstances show all these accidents to which the term *etiolation* is applied.—(See Webster's Dictionary; Translator). It will be gathered from these facts that the more trees are exposed to the light of day, the more compact and hard their wood will become, because simply they can assimilate a larger amount of carbon. In fact the wood of a tree isolated on a high mountain, will contain more carbon, will be more hardy and of longer duration than the wood of the same species and of the same size, but grown in a thick forest.

Among the different effects of light on

vegetation, one of the most remarkable is that which it produces upon the direction of the stalks. For instance, place a growing plant in an apartment pierced with two lateral openings, the one giving access to the air without admitting the light, the other admitting the light with no passage for the air, and you will find all the branches direct themselves towards the second opening. The why and wherefore of this is as follows: When a leaf-bud (which has started) receives more light from one side than the other, the light side elaborates more completely the sap from the roots. There is on this side of the bud more carbon fixed in the tissues; these latter increase in length more gradually, because they are more speedily solidified, and besides the woody descending ducts which are formed in greater abundance at this point, also, arrest quicker the elongation of the ascending ducts. But the opposite side receiving a less quantity of cambium, and the descending ducts forming slower, the tissues elongate for a longer time. Now as the two sides of the same bud cannot separate themselves the one from the other, so as to grow each one in its own fashion, it follows necessarily that this bud must bend towards the side where it elongates the least, that is to say, the light side. This explains to us why it is, that the branches of a tree grown in espalier, which receive the light but from one side, tend constantly to direct themselves in front; why the trees on the verge of a forest incline their branches more to the outside than the interior; and in short why these same trees are, generally speaking, stouter, not so tall, and better stocked with branches than those of the interior of the forest, which show branches only near their summits, and never acquire a thickness proportioned to their height.

All these facts should be explained as happening from the influence of the light, and not as some have supposed, from that of the air, the free circulation of which, under these different circumstances, never acts in a contradictory manner.

ON GATEWAYS.

I HAVE often wondered why the professional writers on Landscape Gardening have so little to say of Gateways. Among the more pretentious authors of this class I find sketches of Gate-lodges, very charming in their details, many of them; but I find little or no mention of those modest gates which must hang at every man's door-yard—those unpretending swinging barriers, by which every country house-holder is shut off from the world, and by which he is joined to the world. They may be made to give a great deal of expression to a place; they have almost as much to do with it, in fact, as a man's mouth has to do with the expression of his face.

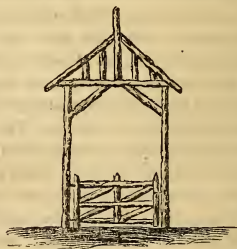
There was once a gate called "Beautiful," by which a lame man lay—we all remember that; there was once too a certain "wicket-gate" (with a great light shining somewhere beyond it) which Evangelist pointed out to Christian, whereby the pilgrim might enter upon the path to the Celestial City—we all remember that gate; and there was another gate, belonging to our days of roundabouts and satchels, by which we went out noon and morning, by which we returned noon and evening—on which we swung upon stolen occasions—a gate whereat we loitered with other philosophers, in other roundabouts and with other green satchels, and discussed problems of marbles, or base-ball, or of the weather—a gate through which led the path to the first home; well, I think everybody remembers such a gate. And thus it happens that the subject has a certain poetic and romantic interest which cannot be wholly ignored, and which I wonder that the landscapists have so indifferently treated.

Fancy, if you can, a rural home, without its gateway, lying all abroad upon a common! The great charm of privacy is gone utterly; and no device of shrubbery, or hedge, can make good the loss of some little wicket which will invite approach, and be

a barrier against too easy familiarity. The creak of the gate hinge is a welcome to the visitor, and as he goes out the latch clicks an adieu.

But there are all sorts of gates, as there are all sorts of welcomes; there is, first, your inhospitable one, made mostly, I should say, of matched boards, with a row of pleasant iron spikes running along its top, and no architectural decorations of pilaster or panel can possibly remove its thoroughly inhospitable aspect. It belongs to stable-courts or jail-yards, but never to a home or to a garden.

Again, there are your ceremonious gates, of open-work indeed, but ponderous, and most times scrupulously closed; the very opening of them is a fatiguing ceremonial, and there is nothing like a lively welcome in the dull clang of their ponderous latches.



Next, there is your simple, unpretending, rural gate, giving promise of unpretending rural beauties within—homely in all its aspect, and giving foretaste of the best of homeliness within. And I make a wide distinction here between the simple rurality at which I have hinted, and that grotesqueness which is compassed by scores of crooked limbs and knots wrought into labyrinthine patterns, which puzzle the eye, more than they please. All crooked things are not necessarily charming, and the better kind of homeliness is measured by something besides mere roughnesses.

Lastly, there is your hospitable gate, with its little rooflet stretched over it, as if to invite the stranger-loiterer to partake at his will of that much of the hospitalities of the home. Even the passing beggar gathers his tattered garments under it in a

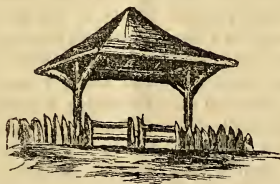
sudden shower and blesses the shelter. And I introduce here a very homely specimen of this class of gates, which I remember to have sketched many years ago somewhere in County Kent, England.



Either my own pencilings were very bad, or else the engraver has failed to give the character of its rough rooflet; which, if I remember rightly, was but a thatch of broom, or of sedge. Yet who does not see written all over it—plain as it is—loiter if you like! Come in, if you like! And I love to think that some little maid, under it—in some by-gone year—said her good night to some parting Leander. Who shall laugh at this, that has ever been young? Are not the little maids, and the Leanders,

always growing up about us? I always felt sure when I found such covered wickets that no curmudgeon lived within.

A second example of somewhat more orderly proportions, but identical in expression, I take from my note-book of travel, finding it credited to some little hamlet of Warwickshire; the posts and supporting arms being of unhewn elm, and the roof a neat thatch of wheat straw, which at the time of my visit was gray and mossy.



Has not somebody somewhere a cottage home, whose homeliness would be enforced, and beautified by such a cosy, covered wicket of thatch?

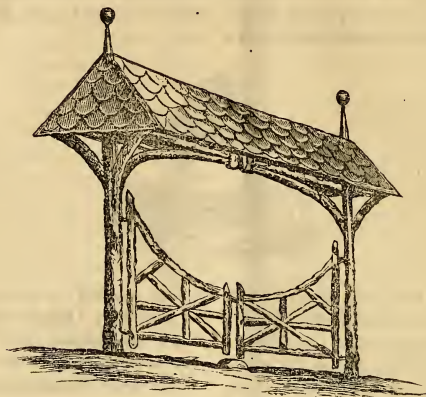
Thatch indeed, does not take on with us, and under our climate, that mellow mossiness which belongs to it in Devonshire. Our winds are too high and drying, and the sun too hot. Still, a thatch properly laid,

will with us, keep its evenness for a great number of years; and for the benefit of those living within easy reach of the coast, I may say that nothing is better for this purpose than the sedge (so called) of the salt marshes.

In default of thatch, however, very pretty rural effects may be made by slabs (being log trimmings from the saw-mills), or oak

bark, (which is almost imperishable) or by scolloped shingles.

An example of the effect of these latter I venture to give :



In this case, all beneath the roof is of cedar with the bark undisturbed, while the posts above the roof are trimmed to a square, tapering and carrying a ball—the balls and the tapering extremities of the posts being painted white, and the roof a dark red. The effect is exceedingly good—though it mixes the rustic and more finished work in a way which the professional artists do not venture upon. But I have lived long enough to know that professional traditions in all the arts—landscape gardening and architecture among the rest—stand in the way of a great many beauties. Every country-place wants its special art-garniture (without respect to traditions) as much as every pretty face wants its special environment of colors and of laces. When, therefore, I hear a man declaim against white gates, or red gates, or rustic gates, or stone gates, *per se*, without reference to their position, or suggestive aims, I condemn him as an iron methodist, who apprehends no beauty by intuition, but only by force of precept.

Perhaps I have myself rather hastily condemned all close gates, as belonging to stable-courts and jail-yards. There are situations, certainly, where they are not only allowable (as upon back-entrances of gardens) but where they contribute eminently to the air of privacy which must mark every true home. And I am reminded in this connection, of a certain garden doorway, which I once saw near Keightley in Yorkshire; it opened upon a narrow lane in the rear of the suburban grounds to which it was attached, and showed such homely, resolute determination to work up into tasteful shape the stones abounding in the neighborhood, that I made a rough draft of it upon the spot.

This picturesque use of rock material is appreciated, and practised in many parts of Great Britain. Thus in the neighborhood of the slate quarries of North Wales, near Caernarvon, the refuse material from the ledges is laid up by the adjoining proprietors in snug fences, that appear at a little distance away, to be crowned with a regularly

castellated battlement. This effect is produced simply by alternating cubical and oblong fragments of slate rock upon the summit of the wall.



In Derbyshire, again, I have seen a kindred effect wrought by the tasteful disposition of the big boulders which are scattered pretty thickly over some of the high moor-lands of that county. In Cumberland and Westmoreland, indications of the same rural adaptiveness abound; of some of these I shall have occasion to speak more fully in future, and to give some striking illustrations.

Thus much has been suggested at present by my friend Lackland's request that I should supply for him the plan of a gate. I will see what I can do for him the coming month.

Edgewood, 2nd Aug., 1865.

OUR NATIVE CLIMBERS.

BY EDWARD S. RAND, JR.

THERE are indigenous to our woods and fields many very beautiful climbers or twining plants, which, in common with most native plants, have been overlooked in the passion for new exotics, and meet with unmerited neglect.

These plants impart the greatest charm to our woodland scenery, twining up the tall trees and robing them in green; converting dead boughs into a drapery of delicate foliage; hiding gnarled roots and fallen trunks, and by fantastic twining from bush to bush, contributing to the endless varieties of light and shade which make one of the chief beauties of our forest scenery. How bare our stone walls and rough fences would look deprived of the drapery of woodbine and blackberry; and what sweet odors would be lost to the air did not the wild grape fling its broad foliage alike over the barren rocks and the tallest trees.

There is nothing which so adds to the appearance of a country house as a judicious planting of climbing plants. Any one can call to mind the bare, desolate aspect of a cottage with no trees, shrubs, or vines

around it, and the improvement made when walls and piazzas are draped with graceful foliage, and a few fine trees and shrubs judiciously planted.

The many objections urged against climbers have rather an apparent than real foundation. Unless allowed to grow too luxuriantly, they neither injure the buildings or make them damp, and the little dirt from dropping leaves and flowers is more than compensated for in grateful shade and beauty of bloom.

Suppose the wild brier which decks all the hedges in June; the clematis, conspicuous for fragrant white flowers and wavy seeds; the staff tree or wax work, so ornamental with fragrant blossoms in June and scarlet fruit in autumn; the grape, with fragrant flowers, ample foliage and purple fruit; the Virginia creeper flaming with the touch of autumnal frost, were transplanted to the farmer's house, allowed to clamber at will over doors and windows, or even to surmount the eaves, would they not give a charm to the house; remove the barren look; relieve the glaring paint or

weather-stained boards by a border of nature's own painting, and be a grateful shelter from the rays of the summer sun?

And to accomplish this much-to-be-desired end, it is not necessary for our farmers to spend their hard earned gains. The fine exotic climbers which are imported at great expense, though beautiful and desirable, are in many cases far inferior to those inhabiting our highways and hedges, and have the disadvantage of being often too tender to endure the severity of our winters. The expense of climbers need only be the time necessary to transplant them and prepare a place for their reception.

The trellis need not be of wire, nor does it require a carpenter's bill for its completion. A cedar tree with the branches cut off about a foot from the trunk and tall enough to allow it to stand a foot above the door after setting it two feet in the ground is needed, and the woods will supply it. Place one of these on each side of the door, setting them three to four feet out; arch a cross piece from top to top; slope others from this to the house and fill in the sides between the house and the posts with pieces of the boughs disposed in squares, diamonds or triangles according to fancy, and you have a very pretty rustic trellis. Leave the bark on; it adds to the effect. If in a few years it peels off and becomes ragged, you will then have the trellis covered with vines.

If however a smooth trellis is preferred remove the bark, trim off the knots and give a coating of red ochre or asphaltum varnish, which will preserve the wood and prevent the lodgement of insects. The portion of the post beneath the ground should be charred to prevent decay. For a window a smaller trellis on the same plan may be made, and for grass plats or the garden the posts alone may be used and they are very ornamental covered with vines. If an arched trellis is built over the gate and vines twined along the fence, they add greatly to the attraction of the place.

The soil required for most climbers is a common loam enriched with well rotted manure.

The species of climbers obtainable, vary in different localities, but there are very few spots where some may not be procured with but little trouble. Let each choose those which are most obtainable.

As a general rule transplant in the spring; the only argument in favor of fall planting is that at the latter season there is less pressing work.

And first, the Clematis "Traveller's Joy or Virgin's Bower" is one of our most hardy and beautiful climbers.

It is a large family with many species; some herbaceous, some climbers, but only one is indigenous to New England, *Clematis Virginica*, which grows commonly by river banks, margins of streams and low roadsides.

It is a very ornamental plant with light green trefoliate leaves, with clasping petioles which support the plant. The flowers are composed of thin white petals and are very fragrant. The fruit is very ornamental, being composed of long tails of seeds.

This is a rapid climber and a good plant, will soon cover a trellis. In any locality where it abounds hundreds of seedlings may be collected. The plant is fond of a damp soil but thrives in any good garden loam.

C. viorna is a fine species with pennate leaves and purple bell shaped flowers, a native of Pennsylvania and Ohio.

Atragene Americana is a beautiful plant nearly allied to clematis; native of dry rocky hills from Maine to Virginia. The leaves are ternate in whorls of four; the plant climbs, as the last, by its leaf stalks. The stem produces opposite axillary buds, from each of which in early spring two ternate leaves shoot forth, bearing a peduncle with a fine purple flower, two or three inches across, composed of four petals.

A pretty biennial climber is the Mountain fringe, (*Corydalis fungosa* or *Adlumea*

cirrhusa). The foliage is delicate, the flowers flesh colored and very ornamental.—Being a biennial it cannot be depended upon for permanent shade, but the plant sows itself when once introduced. It is too delicate for a large trellis, but climbing with other plants is very pretty.

One of our prettiest and most graceful plants is the moonseed, (*Menispermum Canadense*). The flowers are yellowish, white or green, and are succeeded by a black fruit covered with a frosty bloom. It is a rapid climber; the stems die down in winter, but shoot forth in early spring. As the plant is dioecious, both sexes must be planted to obtain fruit.

There are two other indigenous plants of this family: *Cocculus Carolinus*, native of river banks in Illinois and Virginia, with greenish flowers and red fruit, and *Colylocarpum*, *Lyoni* or 'Cup seed,' native of Southern Kentucky, with greenish fruit and lobed cordate leaves; a rapid climber, growing to the tops of trees. These south of Pennsylvania might be worthy of cultivation.

It would be difficult to find a more beautiful climber than our wild grapes in their many species and varieties.

We regard the grape only as an ornamental climber, for other purposes, all our wild grapes and ninety-nine one hundredths of the "new hardy grapes" are perfectly worthless unless we propose making grape jelly, which is delicious, and for which the common fox grape is the best. But we say to all, plant grape vines for ornament; plant them for the beauty of the foliage, for the perfume of the flower; let them cover old walls, trees, fences, and rough places, and thus render unsightly objects beautiful. We have in this country six species of native grapes: of these, three, *Vitis Labrusca*, *V. æstivalis*, and *V. cordifolia*, are natives of our Northern States; the other three, *V. vulpina*, *V. bipennata*, and *V. indivisa*, are natives south of the Ohio.

V. Labrusca is our common wild grape with broad heart-shaped leaves, very white

underneath, flowers and tendrils produced opposite the leaves, flowers dioecious, greenish and very fragrant—berries large, purple amber or whitish, with a tough pulp. A rampant climber, often reaching the tops of the tallest trees. From this species the Isabella grape has sprung.

V. cordifolia (*vulpina* of some botanists). Leaves cut and toothed, green on both sides and thinner than the last. Berry small, black, with bloom, sour, ripening after the frost; flowers very fragrant; sometimes with the next called "Pigeon grape." A very pretty species for arbors.

V. æstivalis. Leaves downy when young, smooth when old, green above. Not as common as the last. Berries small, sweetish, ripening in October or earlier. A tall climber, and like the last, desirable for arbors and trellises.

The Virginia Creeper, Woodbine, or Five-leaved Ivy, (*Ampelopsis quinquefolia*) is one of our most common and ornamental climbers. It is easily distinguished by its five oblong lanceolate leaflets, and grows by road-sides and on low rich grounds. The flowers are small green and ornamental; the stems climb to a great height supported by tendrils; the berries are small, black, with a slight bloom, ripening in September or later. During the whole summer the plant presents a dense mass of dark-green shining foliage, but with the autumn frosts comes the greatest beauty, the foliage changing to all the tints of scarlet, crimson and purple. There is no more ornamental climber; it is perfectly hardy—a rapid grower, and very clean. It thrives well at the roots of trees, and for the last few years we have planted one hundred each spring to clothe the naked trunks of old pines which thus become pillars of green all summer, and columns of flame all the autumn.

Another hardy and ornamental vine, not uncommon on rich soil, is the "Roxbury Waxwork, Climbing Bitter-sweet, Staff Tree," &c. (*Celestrus scandens*). It is a woody vine with close twining stem and a tall

climber. The flowers are greenish, and of little beauty; the foliage is oblong ovate of showy green. The fruit is a yellow berry which, when ripe, bursts open, showing a bright scarlet covering enveloping the seeds. The foliage in autumn changes to golden yellow.

We next come to a class of well-known favorite climbers, the Honeysuckle (*Lonicera*.)

The plants are too well known to need description, and are more easily procured from nurserymen than from the woods. Plants from seed bloom the third year.

There are some native species which are little known, and which should receive more attention.

L. hirsuta is a large foliaged woody vine often climbing twenty feet high. Leaves not glaucous, hairy beneath, oval, dull colored, the uppermost united, the lower shortly petioled. Flowers yellow in whorls—native of damp thickets.

L. sempervirens. Our common Trumpet Honeysuckle; flowers and berries red or yellow.

L. grata. A pretty species with smooth glaucous obovate leaves; flowers in axils of upper leaves, whitish purple turning yellow in fading, fragrant. Native of rocky woods, New York, and westward; common in cultivation,

L. flava. A species with smooth, pale glaucous leaves obovate or oval. Flowers in close whorls, light yellow—native of rocky banks, from New York westward and southward.

L. parviflora with greenish yellow flowers tinged with purple, grows about four feet high, but is not a climber.

To those who have not the Chinese Wistaria, (*W. sinensis*, often barbarously written "*Wisteria Chinensis*,") our woods furnish a beautiful species.

W. frutescens is a rapid and hardy climber, resembling the exotic species. The foliage is darker, the flowers deep purple, and the racemes of bloom very closely set; produced in June and July.

The Common Hop, (*Humulus lupulus*) is a pretty and useful vine. It grows spontaneously near the banks of streams. Root perennial, stem annual, in rich soil very strong. A plant of rapid growth. The attacks of the hop worm are easily prevented by syringing with whale oil soap when their presence is first perceived.

Solanum dulcamara, bitter sweet, or woody nightshade is a well known medicinal plant. The stem is woody, the flowers purple, succeeded by bright red oval berries, foliage dark green.

The plant in leaf, flower and fruit is very ornamental, and well suited for covering low trellises.

The other species, (*Solanum nigrum*) Deadly night-shade, is not a handsome plant. The flowers are white, the berries black. Both of these plants are introduced from Europe.

The nearly allied classes, Ipomea and Convolvulus have some pretty representatives among our indigenous climbers.

I. lacunosa is a white flowering species, native of Ohio and Illinois, with heart shaped pointed leaves.

I. pandurata commonly called "Man of the Earth," is one of our finest climbers. The root is tuberous, often as large as a man's leg. The annual climbing stems are often nearly an inch in diameter, and in a few weeks attain the height of twenty feet. The flowers are white with purple tube and very numerous. The shoots usually appear above the ground about the last of June, and the plants is very ornamental until killed by the frost.

C. arvensis is not uncommon in cultivated grounds and by road-sides near the coast. The flower is reddish white and very pretty, but the plant spreads rapidly and will soon overrun a garden.

C. (Calystegia) sepium, a fine species with large white, pink or red showy flowers—not uncommon by road sides. Root perennial, stem twining, ten feet high. Well adapted for trellises.

The well known Horse Briar, (*Smilax ro-*

tundifolia) is valuable if planted inside of exposed fences. It is a tall climber, often rendering thickets impenetrable. The leaves are ovate, shining; the stem green clothed with strong prickles; berries blue black. The foliage is very ornamental and the bright green stem is conspicuous in winter.

Dioscoria villosa; (but why "villosa," is a question) is a pretty slender climbing vine with greenish flowers, common in thickets, but not specially valuable as a climber.

In conclusion, we must include the rose, although not properly within the range of this article, as there is no climbing rose indigenous to the Eastern States.

The sweet briar, (*R. rubiginosa*) and the smaller variety, (*R. macrantha*) are both introduced from Europe, though often found growing wild. The only native climbing rose is the wild rose of the Prairies, (*R. setigera*) found from Ohio, westward and southward. From this, the fine cultivated varieties commonly known as "Prairie Roses," have been raised.

Our list of native climbers are far from being complete. We have only noticed a few of the best and most common, hoping our article may lead to a greater attention to "Home adornments," on which subject we may discourse more fully anon.

Glen Ridge, August, 1865.

THE HARVEST HOME.

BY G. P. DISOSWAY.

"The harvest! the harvest! once more we behold
Fair plenty array'd in its livery of gold;
We are spared to exult in its bounties again,
A year hath been granted, and shall we remain
Forgetful of HIM who hath lengthen'd our days?
Great God of the harvest, to Thee be the praise.
Thou hast prospered our toils, and hath given increase,
And established the land in abundance and peace."

N. Y. MIRROR.

It has ever been a season of rejoicing when the labors of the harvest field were over and the enriching crops safely gathered. The early Greeks presented offerings to Ceres, whilst their husbandmen shared in the public joys of the autumnal season. In ancient Rome, too, warlike as her citizens were, they venerated the plough, and their heroes followed its silent furrows. Even Cato wrote a treatise on husbandry, and from it, he says, "*spring our strongest men and bravest soldiers.*"

These devotions, doubtless, were borrowed from the Jewish feast of ingathering, and this was a time of great joy. No feast was attended with greater rejoicings than that of the *Tabernacle*, when the Israelites returned thanks for the fruit of the vine, and joyfully expressed the expectation of the MESSIAH. During this festival, they

lived in tents, offering daily sacrifices to God, and carrying branches of palm, olive, citron, myrtle and willow, and frequently, repeated "Hosannah, save, I beseech Thee." While the trumpets sounded, they sang songs of thanksgiving, and their libation was the water drawn from the pool of Siloam.

The feast of the *Pentecost* was also called the feast of the harvest, and the day of first-fruits, when the Jews presented to Heaven in thanksgiving, the earliest gatherings of the harvest, in bread baked of raw corn. These offerings were called *first-fruits* because presented in the temple before any part of the crop was touched, and consisted of wheat, barley, grapes, figs, apricots, olives and dates. Such rejoicings continued a week. The first-fruits carried in procession by twenty-four persons, were preceded by the ox for sacrifice, with gilded horns and a crown of olives.

Nor were the poor forgotten—they never should be. When the triumphant armies should possess Canaan, by an especial ordinance of the Almighty, they were not to be neglected, as the olive was to be beaten

but *once*—the scattered grape was not to be gathered, and “*clean riddance*” was not to be made in the corn field. Its corners were to be unreaped and the forgotten sheaf left for the “poor and the stranger, the fatherless and the widow.” This was not simply an act of mercy, but enjoined as an ordinance with peculiar solemnity: “I am the Lord thy God; I have given thee all, and make this request.” How good is the Lord! At this season of fruits, grain and plants, let us not forget the needy and the destitute.

In harvest-time, as in sheep-shearing, we behold old and beautiful pictures. Abraham and Isaac and the early patriarchs have looked upon such scenes, for it has ever been a time of rejoicing. In Egypt, we see Joseph and his brethren, Abraham and Isaac, overlooking the harvest field from their eastern tents, David’s household busy in the fields, and Ruth—the beautiful Ruth—“weeping amid the alien corn.” What fine pictures for thought and mental delight! Enchanting as may have been the harvest fields of Egypt and Palestine, they cannot surpass in picturesque beauties, those in our own favored land. Here vast hills, dales and vallies wave with the golden grains. Reapers and gleaners all are busily engaged in gathering the enriching harvest. But the bringing home of the last load seems to be the grand picture of the harvest in old lands, and was the crowning thing.

In England, the farmer’s daughter used to be selected for the *Harvest Queen* and dressed very becomingly for the occasion with a little round straw hat, wreathed in ears of corn and convolvuluses. She was always seated sideways on the leader, a fine chestnut colored horse, whose head was adorned with bunches of corn-flowers and blue ribbons. The driver’s hat was decorated in the same way, and so were the teams ornamented, “*true blue*” being the favorite color with the rustics. The last shock was left standing in the field, from the topmost sheaves of which long streams of blue, yellow and crimson floated. This was the “*harvest sheaf*,” the crown of the

field, and the last received on the top of the load, it became the most conspicuous gay object. Onward now goes the wagon with the last load, towards the village, every cottage hailing with a hearty welcome the procession as it passes along.

The custom was once very general among European nations, though differing in its details. In Scotland, the last cut handful was thus honored, and he who succeeded in this respect was said to have “*won the kein*,” or half-churned milk. The laborers followed the well laden stock cart from the field, crowned with ears of corn, and singing “*Harvest Home*.” An old poet thus sings:

“Some bless the cart, some kiss the sheaves,
Some plant them up with oaken leaves,
Some cross the thill-horse, some with great
Devotion stroke the home-borne wheat.”

But in this, as in other agricultural customs, a change has taken place; the old ceremonies and festive enjoyments which crowned the joy of harvest have been disappearing one by one. In our day there is not much regard for antiquities, and we are apt to pass into the opposite extreme.

The well-gathered fruits of the earth should ever be a cause of peculiar rejoicing, and thankfulness and the “*Harvest Home*” may well be sung in our favored land, when the husbandman returns “to bless his household,” after the toils and cares of his fields. How merciful and gracious is the Almighty! “*While the earth remaineth, seed time and harvest, cold and heat, summer and winter, day and night shall not cease*,” was the kind promise to the remnant who escaped the destruction of the deluge. From generation to generation since, the harvest field and its fruits have been preserved to man. The regular revolution of the seasons continue and the same kinds of corn, now waving in golden plenty over our fruitful land, once covered the fields of Egypt, Palestine, Greece, and Rome. *Now as then*, has the sickle reaped its ripened crops, the sheaves have been bound and garnered for the support of man and beast. So good, we again say, is the LORD!

The Clove, S. I., August, 1865.

CURIOSITIES OF VEGETATION.—No. III.

THE fashionable world of both city and country, during the last year or two, has been invited to adorn and ornament itself with various articles in the shape of pins, ear-rings, bracelets, &c., manufactured from ivory. This substance is one of the curiosities of vegetation. *Phytelephas Macrocampa* does not sound, even if you can pronounce it, very much like breastpin, but it is the botanical name, we believe, of the vegetable Ivory-Tree, which is a South American Palm. The fruit at first contains a clear insipid fluid, which afterwards becomes sweet and milky, and alters its taste as it hardens, till at length it becomes nearly as hard as ivory. Other trees of the same genus, in various countries, furnish a similar substance.

The *Ficus Elastica*, or Caoutchouc-Tree, is a native of South America and India. It grows to a considerable size, has shining pointed oval leaves, and small, inedible fruit. The milk which yields the Indian rubber is obtained from incisions made in the bark of the trunk and branches. This juice separates into a firm elastic substance, and a foetid liquid. The juice yields about one-third its weight of caoutchouc.

The Gutta-Percha-Tree is widely scattered over the Indian Archipelago. It is from sixty to seventy feet in height, and from two to three feet in diameter on the average. The milky sap, which exudes from incisions made in the bark, is boiled, to drive off the watery particles; but, if a tree is only partially wounded, and a small quantity of juice extracted, it may be moulded in the hand, and will consolidate in a few minutes into the substance known as gutta percha.

The *Bassia*, or Butter-Tree, is found in various countries of the intertropical region. The Sheah-Tree of Africa resembles very nearly the American oak. The kernel of its fruit, when boiled, yields a white firm butter, as finely flavored as the best dairy butter. The Palo de Vaca, or Cow-Tree, of

South America, grows to a great size. One measured by Sir R. Ker Porter was more than twenty feet in circumference. The trunk shot up branches to the height of sixty feet, and then sent out vast arms and luxuriant foliage. The whole height was fully one hundred feet. The leaves are leathery, and about ten inches long. When the trunk is pierced it yields an abundance of glutinous milk, tolerably thick, free from all acridity, and of an agreeable flavor.

Another milk tree is found in Demerara. On piercing the bark a copious stream of milk-like fluid flows out. It is thicker and richer than cow's milk, destitute of acridity, but apt to leave a slight feeling of clamminess on the lips.

The *Urania Speciosa*, a native of Madagascar, is thus described by Blackhouse in his "Visit to the Mauritius and South Africa":—"Clumps of these trees, composed of several stems rising from the same root, are scattered over the country in all directions. The trunks, or more properly root-stalks which are about three feet in circumference sometimes attain a height of thirty feet. But, whether of this elevation, or scarcely emerging above the ground, they support grand crests of leaves of about four feet long and one foot wide, but often torn into comb-like shreds. The head is of a fan-like form, and the flowers, which are not striking for their beauty, are white, and produced from large horizontal green sheaths. The foot-stalks of the leaves, which are somewhat shorter than the leaves themselves, yield a copious supply of fresh water, very grateful to the traveler, on having their margin cut away near the base.

"Probably the water may originate in the condensation of dew, and be collected and retained by the peculiar structure of the leaf. It has a slight taste of the tree, but is not disagreeable."

The *Nepenthes Distillatoria*, or Pitcher Plant, which is common in Ceylon and other Eastern countries, has a pitcher-shaped bag

attached to the foot-stalk of each leaf, near the base. This curious appendage has a neatly-fitting lid, moveable on a fibrous hinge. By the contraction of this fibre the lid is lifted up, and dew or rain collected in the pitcher, which saturates the vessel. Then the lid descends and closes in the fluid so as to prevent evaporation, and as soon as the plant has drained off this supply, the lid opens again.

As instances of motion in plants, we may mention the folding of some flowers when the sun is absent, and the opening of others when he has departed. The white Marigold closes its flowers when rain approaches, and the dwarf Celandrina shuts up its crimson corolla at about four o'clock every evening.

The *Mimosa Pudica* is so sensitive that it is said that at Rio Janeiro the falling of horses' feet on the road sets whole masses of this plant in motion. The genus *Oxalis* possesses the property, in a greater or less degree in different species, of folding their leaves when stimulated. The Sundews have the surface of their leaves covered with long hairs which secrete a viscous substance. If an insect settles upon the leaf it is impeded by this secretion, and, before it can escape, the hairs curve round and pin the victim to the leaf. The stamens of the Barberry, when touched with a pin, spring forward and make a bow to the stigma. The *Oscillatoria*—common in ditches, ponds and damp places—have animal-like movements when young; now twisting themselves into the shape of an S, then straightening them-

selves, twisting again, and so on. The *Hedysarum Gyans*, of Bengal, has compound leaves; the end leaflet being larger and broader than the two side leaflets. The terminal leaflet moves under the influence of the sun's rays. The two lateral ones rise and fall alternately, so that when one is up the other is down. The movements of these side leaflets continue day and night, but the rapidity of these movements varies at different times.

There is an Australian plant which erects a column formed by the union of parts of its structure, on the application of heat. The *Dionæa Muscipula*, a native of Canada, has leaves with broad leaf-like stalks. These fleshy leaves are armed with strong sharp spines, three on the blade of each lobe of the leaf, and with a fringe of longer spines round their margins. When an insect comes in contact with the base of the central spines, the leaf closes, impaling the insect or entrapping it. The leaf remains shut up, having its spiny fringe firmly interlaced until the body of the insect has wasted away.

Some plants are luminous, and the *Oictamnus Albus* will inflame if a light is applied, so that the bush may be enveloped with flames without being consumed.

When plants are budding, heat is sensibly liberated. A piece of ice placed on a growing leaf-bud melts, when it would remain frozen in the open air; and it is found that the heat on the surface of growing plants is several degrees higher than the surrounding air.

THE MELON.

THE Melon is the largest of all fruits, and yet it grows on the lowliest of fruit-bearing plants. It is a native of the milder regions of Asia, but was introduced into Europe before the time of Pliny, as that writer, when treating of gourds and cucumbers, after saying that "when the cucumber acquires a very considerable size it is known to us as the *pepo*" (supposed to be the

pumpkin) adds—"only of late a cucumber of an entirely new shape has been produced in Campania, having just the form of the quince. The name given to this variety is *melo pepo*." This fruit, it is concluded, must have been the melon, which still bears the botanical name of *Melo cucurbita*. The melon had been known, also, to the Greeks who were accustomed to soak the seeds in

milk and honey previous to sowing them, and even to wrap them in rose leaves, believing that when thus cradled in sweetness the fruit to which they gave birth could not but be mild and fragrant. How early it was brought into Europe is not known with certainty, although it is said to have been cultivated in England in the time of Edward III. It is more probable, however, that it was introduced into England from Italy during the reign of Henry VIII.; for in 1526, Gerard, though he had not himself grown it, yet mentions having seen it at "the Queen's hothouse at St. James'," and also at Lord Sussex's house at Bermondsey, where he says, "from year to year there is great plenty, especially if the weather be anything temperate.

A native of warmer climates and provided by nature with a rind of such thickness that only extreme heat can penetrate to ripen the pulp within, when grown in England it needs, in addition to the artificial heat, as much as their Summer sunshine can supply of a more genial kind of warmth. It is sometimes grown from cuttings, which is a surer method of securing an unchanged perpetuation of the parent plant. But the usual mode of propagation is by seeds, which are tested, like witches of old, by being thrown into water, when, floating on the surface, ensures the condemnation of the melon-seed as certainly as it once did that of an old woman. Though melons are sometimes grown in the south of England under hand-glasses, like cucumbers, they cannot be generally reared there in the open air, since 65 is the least temperature at which the seeds will germinate, and from 75 to 80 is needed before the fruit can be ripened. A sheltered hotbed is therefore essential to their cultivation in that climate.

An annual plant, destined only to exist for the space of a few months, and yet to attain large dimensions in all its parts, the growth of the melon is very rapid, the newly-quickened seed soon sends forth tender, succulent shoots which, as they rapidly

lengthen, develop numerous large alternately-disposed, lobed leaves, accompanied by spiral tendrils; and in the course of the third month after sowing, the pale, yellow flowers begin to unfold their soft, limp, five-cleft corollas. In the course of five or six weeks after the setting of the blossom, the ponderous product may be expected to have finished its rapid course and reached maturity, evidenced by its having attained its full size; in some sorts, by the gaining also of a yellowish tinge, but most certainly by the exhalation of a powerful but pleasant odor; though some kinds give likewise the unmistakable sign of the stalk cracking in a little circle close to the fruit. In general it is rather difficult to discriminate the exact stage of maturity, and only experience can enable any one to determine with certainty the precise time when a melon has reached, yet not passed, its perfection. When perfectly ripe, a melon should have no vacuity, a fact ascertainable by the sound given out on gently knocking the exterior, and when cut, the juice should not run in a stream, but only gently exude to gem the flesh with dew-like drops of moisture. Small melons are generally esteemed as better than the larger ones, as the cultivation which secures increase of size, tends also to impair flavor; and the bulky giants of the race, produced by excessive manuring, are therefore rejected by good judges, who desire rather to gratify the palate than to please the eye. The fruit should be cut from the vine in the morning, and the majority of the finer sorts should be eaten the day they are gathered, though if cut a day or two before they are ripe, they may be kept for a week in a cool dark room, and some sorts will even keep for weeks, under these conditions; for light has a great influence in facilitating the chemical changes on which the ripening process depends, and its deprivation, therefore, tends much to retard decay: they should, also, not be laid down, but suspended in nets, so as to avoid pressure on the surface. The careful and expensive methods

of culture required in England, for the production of melons, are not necessary in this country, where they are found in great perfection, anywhere south of latitude 41 or 42.

The fact of the male and female flowers of the order cucurbitæ growing apart from each other, though upon the same plant, causes great care to be necessary in order to preserve purity of breed. Gourds and cucumbers must be kept apart from the melon beds, to prevent their pollen from impregnating the pistilliferous melon-flowers and thus producing hybrid, and inferior kinds. It is thus, by mixing various kinds, that so many varieties have been created as to have now become almost innumerable. But there are certain broad distinctions of widely different varieties. As far as the present writer is informed, the choicest and most reliable of these now in cultivation, are the thick-skinned, soon perishing sort, grouped together under the general name of Cantaloupes, the Citron and Persian Melon, and the Water Melon, of which, again, there are several varieties.

The type of the first class was probably the original, old-fashioned Musk Melon, characterized by the thick network of grey lines over its surface, and by possessing comparatively little scent, varying in size from one to thirty or forty pounds in weight, but being so uncertain in quality that out of half a dozen specimens, but one, perhaps, would be found good. One of the first to supercede the old Musk Melon, and still one of the most esteemed throughout Europe, though reckoned in this country but second-rate, was the melon which claims in a more restricted sense to be the owner of the name of Cantaloupe, having been so called from a town of that name, situated about fifteen miles from Rome, and where this fruit has been cultivated ever since the Mithridatic war. Usually nearly round, and of middling size, its exterior always rough and irregular, varying much in color, sometimes orange mottled with green, and sometimes green and dark brown; while

the flesh also assumes different tints, being in some nearly white, in others orange or pinkish.

The Citron, or green-fleshed melon, was brought into France by a Monk from Africa, in 1777, and has from thence spread into many countries, and given birth to numerous varieties. This is our favorite melon, in its several varieties, being one of the finest grown and yet peculiarly easy of culture, the climate of the middle and southern States suiting it better, probably, than any other melon.

The warm, dry climate and light genial soil of Long Island and New Jersey, are especially adapted to the culture of melons of any kind, but many other sorts require greater care than the green-fleshed favorite, without compensating for it by any superiority, and it therefore has few rivals in the New York and Philadelphia markets.

A very distinct variety, comparatively recently introduced, is the Persian Melon. The seeds of this melon were sent to England from Persia by the English Ambassador, in 1824, and were first planted in the gardens of the Horticultural Society, where they produced at once ten different varieties. The Persian melon is cultivated in this country, where it has attained great perfection and is much esteemed.

The plant which produces the Water melon is of a different species (*Melos citrullus*) and may be easily distinguished from the varieties of the *Melos cucurbita* by its deeply cut leaves, while the fruit itself shows an equally marked distinction in its smooth green surface. The Water Melon, as well as the Musk Melon, cannot be raised in England except artificially by the aid of the glass. Identified with the "melons" mentioned in Scripture, Water Melons are said to have originated in the Levant, but are found abundantly, and are probably indigenous, in India and China. They require very little care or attention, and immense fields of them are raised every year in the middle and Southern States.

A near, but very humble relative of the

aristocratic melon is our common pumpkin (*cucurbita pepo*,) a far hardier plant than the melon. In a rich soil, for it is a gross feeder, the pumpkin, or, as it was formerly, and we are told still ought to be called, the *pompion*, grows luxuriantly and ripens its fruit perfectly throughout the States. In its favorite situation, trailing over a manure heap, it is not only useful in assisting to decompose crude material, but veiling the unsightly mass with its large handsome leaves, it can turn an eyesore into almost an ornament. Remarkably rapid in its growth, when well supplied with water, it will form shoots forty or fifty feet long, so that a single plant is capable of extending, in a single season, over an eighth of an acre of ground. Clum-

sily bulky in its huge growth, yet offering but few charms to the taster, the pumpkin early furnished a comparison for persons whose heads were larger than their intellects, and which it would seem "the world would not willingly let die," since it has survived from the time of Tertullian to the present day, the initial letter only slightly hardening when we now apply to a thick-headed clown the appellation of a "*bumpkin*."

It may be not inappropriately added that, in consideration of its rapid and extended growth, and the immense size to which its fruit attains, the *Cucurbita Pepo* is really "*some pumpkins*."

TRUFFLES.

MESSRS. EDITORS:—I find in an English periodical of several months back date some account of the Truffle and of the mode of procuring it which may afford your readers some interest, as it has me. As far as I know, this delicious esculent has not been discovered in this country; and we are indebted to foreign soils for what we prize as a great delicacy, and for which we are willing to pay at our best restaurants a large price. I know no reason why it may not be found growing in our own soil; and I should like to direct the attention of such of your readers as live in favorable localities for its production, to its characteristics, with a view to ascertain whether it may be found among us.

In the London market it is almost always sold as a product imported from France, and at a price from two to three dollars per pound. But more than three-quarters of the quantity thus sold, and that of the finest quality, is produced in English soil, and in reality supplied to the London markets by country dealers at a very low price.

Very little has hitherto been written about the Truffle; and we look in vain for any account of its habitat or methods of

propagation in botanical works. In scientific treatises it is classed in the ranks of the esculent fungi, like the mushroom, and is named the "*Tuber cibarium*." "There are few of nature's productions," says our English authority, "so extraordinary as this family of the fungi; and in no other country than our own are there so many varieties of the class to be seen, with their curious shapes, their beautiful colors, and their fairy rings springing up like magic after a night's rain or a damp day." Unlike the mushroom, this strange fungus is propagated *under* the surface of the soil. They are found where the soil is black, loamy, mixed with flint, or is composed of chalk and clay. They grow close to the roots of large trees, and seem to be propagated by the partial decay of their long, fibrous roots, and nourished by the dripings from their branches. They are found in shrubberies, plantations and woods, and sometimes in banks and ditches, but always where trees abound, beneath them or at a little distance from their stems. They grow in rings or clusters of six or seven together round each tree. "Nor will they flourish beneath every kind of tree, but frequent the oak, the lime and cedar, and

appear especially to love the beech, since wherever that tree grows with the richest luxuriance the truffles are found in great abundance and of the best quality."

The usual season when Truffles are found in England is the month of September; but their appearance depends very much upon the state of the weather. In a dry season the truffle-hunter will not look for them before October or November, and until sufficient rain has fallen for their production. In favorable situations and in damp weather they will grow in a few days. They will increase from a quarter to half a pound in weight, and in rainy seasons they will sometimes reach a pound, while they measure from four to six inches in circumference.

The Truffle resembles, externally, a rugged knot of an old oak, or a piece of decayed wood. This is the large truffle. There is another kind well known to the truffer, though ignored in scientific accounts, called the red truffle on account of its color, and is of the size of a pea, and equal in flavor to the larger kind. This larger truffle, when examined through the microscope, is found grained with fibrous lines, and is of a firm, tough texture, white in color when young, and growing darker until its ripeness is shown by becoming entirely black.

As the Truffle grows *under ground*, there

would be some difficulty in finding it were it not for the fact that, before it is cooked, it possesses a peculiar and unmistakable odor—so powerful and so peculiar that no imposition can be practiced in its commerce. The raw truffles when ripe and fit to eat possess this pungent and oppressive odor which will pervade the whole house; and they must be boiled or stewed when this odor will disappear.

This peculiar perfume is nearly imperceptible to the human senses when the fungus is growing beneath the soil; and for this reason the truffle-gatherer is assisted in the search for them by a peculiar breed of dogs that are trained for this purpose. "Clever little dogs they are, and trained from puppyhood to hunt the truffle out by the nose, and then to scratch it up with their long sharp claws. It is curious and interesting to watch the powers of nose possessed by these small dogs; how directly they perceive the odor of the hidden truffle; they rush to the place, straight as a dart, even at twenty yards distance."

Can you inform me, Messrs. EDITORS, who are supposed to know *all* about *every* thing, whether the Truffle grows in this country, and if not, whether it could be propagated by artificial means, like its congener the Mushroom?

HYBRIDIZING THE GLADIOLUS.

BY E. FERRAND, DETROIT, MICH., LATELY CHIEF OF CULTURE AT LEROY'S, ANGERS, FRANCE.

THE Gladiolus, by its graceful standing, the beauty of its flowers and the varieties of its colors has become one of the plants *le plus à la mode*, and is well deserving of the attention it receives.

The facility with which it hybridizes has led the present gardeners to give it especial attention, and they obtain many splendid varieties. Of all the interesting labors of the gardener, none is so exciting as artificial fecundation; for those not

acquainted with it cannot imagine what pleasure the successful raiser feels at the coming into bloom of a valuable new gain, and no plant more than the gladiolus will afford pleasure in that respect, as if you only have two plants of different shades planted by each other, even if you let the fecundation make itself without any help on your part, the seeds produced by either plants will give you plants of a character different from that of the parents. When a

plant is desired to be artistically fecundated all the stamens must be cut off as soon as the flowers open, by aid of fine scissors or little pincers, taking great care not to injure the pistil. Stamens are then cut from the plant you wish to ally to the former, and shaken finely over and upon the pistil of this one; the stamens of one flower are enough to fecundate all the flowers of the other plant, but to make it sure that the plant is fecundated the operation must be repeated every day for two or three days; it must be understood that the anthers which terminate the stamens must be open when the operation is made, so as to let the pollen drop off at the least shaking. Both plants may be fecundated by each others pollen, even if they do not flower precisely on the same day, for the spike of a gladiolus remains in bloom for two or three weeks, the flowers opening successively, beginning with the lower ones. Flowers that should not have been fecundated on account of their flowering too soon or after there was no more flowers on the other plant from which pollen was taken, must be cut off after they have done flowering, thus leaving on the plants those only that were operated on, so they will get more strength and perfect their seed.

Variety of colors is not the only object to be aimed at in hybridizing gladioli, but shape and largeness of flower must also be considered; and when a desired color is obtained, if there is something lacking in size and shape of the flower, a plant perfect in the latter must be selected and both plants worked together.

Gladioli offer a richness of varieties not found with any other plant, and none repay the amateur better, as rarely the seedlings are like the parents, and they never are inferior to them, and one may calculate to obtain, at least, one very superior plant out of every ten seedlings.

In my father's nurseries at Cognac, France, where gladioli are extensively grown and seedlings raised, the plants selected to be hybridized and to produce seeds are cultivated in a separate spot, the seed is labelled when collected, in order to know the parentage, and thus compare, and then is sown at once in cold frames, and it comes up before winter, when the small bulbs are taken up, and afterwards planted again early in spring in very rich compost, most of them bloom the same year; they go through a very severe examination as they blossom, none but those that are a real improvement over the parents are numbered and put by, waiting a second examination, which comes at the next flowering, when they are definitely classed and named. The refuse, that is to say, those which have nothing extra to favor them with entering the extra selected list are thrown aside among the mixed varieties and sold as such.

I must not forget to mention that artificial fecundation can be operated at any time of day, if a fine day, but, from 8 till 10 at morning is preferable. It must not be done in rainy or cold weather.

“THE ACTION OF METALLIC SALTS UPON THE GROWTH OF PLANTS.”

BY J. P. DAKE, SALEM, OHIO.

UNDER the above heading I observed with great pleasure, in the August number of the “*HORTICULTURIST*,” an article from Mr. J. M. Merrick, Jr.

The experiments detailed, showing the physiological or toxical effects of various substances acting upon plants, has awak-

ened a desire that they may be pushed yet further. I have long been a believer and advocate in the cause of direct experimentation. If nature abounds in truths and has her established laws governing all her domain, why should we be satisfied only occasionally, at long intervals, to *stumble*

upon them; or to learn of them only as she may by accident suggest them to us?

We should, in every department of Agriculture, as in Medicine, not simply be willing to know what nature teaches in the ordinary channels of every day life, but also what she teaches when we *interrogate* her; when, by all manner of experiments we question and cross-question her, as a skillful advocate does a witness, upon whose testimony hangs the life of his client.

The experiments of Mr. Merrick, so far as he informs us, were not made with any special reference to the diseases or Pathology of plants. Now we beg leave to suggest, as we most earnestly desire, that his trials with various Metallic Salts, as well as other toxical substances, be directed with regard to the *morbid conditions of plants*. For example,—we have various forms of blight and of mildew; we have the yellows, the gum, the black knot, &c. With these we have been battling for years, and yet must confess we have no effectual remedies against them. And here I must say, very briefly, that I do not attach the importance that many are inclined to grant to Microscopical researches or Chemical analyses, in looking for means wherewith to cure those destructive maladies. From present knowledge, I am persuaded that the “Sporidia,” seen in the juices of trees, suffering with blight, are not the morbid cause, nor the essential disease to be treated. I view them as a *product* of disease, or if you please, an agency, commissioned simply to complete the dissolution of those fruits, leaves and trees, already doomed to de-

struction by an unseen, unweighed unmeasured influence operating upon the vital processes of those fruits, leaves and trees.

Hence, till proofs are afforded, in the shape of well authenticated facts, backing the theoretical prescriptions, based upon microscopical studies of “Sporidia,” I cannot yield my confidence to them.

And I have no more faith in efforts by chemical laws and means to regulate the vital functions of a plant, than I have of the human body. Chemical researches have taught us many curious and interesting facts in regard to the constituents and products of plants, as of the human body; yet by virtue of them simply, we can approach but the merest confines of vegetable, as of human disease.

What we need then, I repeat is, by diligent and careful experimentation, to ascertain how various toxical or medicinal substances affect a plant in removing it from a healthy condition.

When we have carefully observed and noted each departure, and every successive stage of each departure from a healthy standard in our plants, vines, trees, leaves, and fruits, both in nature and under the hand of toxical art, then may we begin to talk of the Pathology and the Therapeutics of the vegetable world, with some good prospect of practical as well as scientific results.

He who shall successfully devote sufficient time and means to these investigations, will be one of the earth's noblest benefactors.

REPORT ON GRAPES—ROT AND MILDEW—1865.

BY W. A. WOODWARD.

July 10th—The grape rot appears on the following varieties, some of them to a greater degree than I have ever seen, viz:—Alexander, Anna, Catawba, Concord, Cuyahoga, Diana, Hyde's Eliza, Lydia, Le Noir,

Logan, Mary Ann, Mead's Seedling, Manhattan, Mottled, Northern Muscadine, Perkins, To-Kalon, Taylor's Bullitt.

July 25th—The mildew shows itself on the berries of Anna, Allen's Hybrid, Cuya-

boga, Herbemont, Hyde's Eliza, Le Noir, Logan, Lydia, Mead's Seedling, To-Kalon, and Roger's Seedlings, Nos. 1, 4, 5, 9 & 22.

Aug. 10th—The grapes which show no disease up to the present time, are Clinton, Creveling, Delaware, Franklin, Garigues, Hartford Prolific, Isabella, Israella, Maxatawney, Miles, Rebecca, York Maderia, and Roger's No. 3.

Many reasons are assigned for these diseases. Two years since it was believed to be the excess of wet; last year it was the extreme dryness; this year being neither wet or dry, the cold nights and hot days are alleged to be the predisposing causes.

The latter cannot be the true reason, for we always have the hot days and cool nights at this season of the year, and should abandon the grape culture from Maine to Georgia, if it is true. We must look further back and consider; 1st, the attenuation of the vine during its early stages, propagated from feeble wood, and especially from green cuttings, to supply the excessive demand at the highest prices, and 2d, the temptations to convert weak plants into saleable ones by growing them in manure beds, and watered with chemical preparations to induce unnatural growth; 3d, unnatural (sometimes called scientific) pinching and heading-in of the vines during its growing season, continued from year to year. Experience shows that this treatment will develop disease in the 4th and 5th year, (if not before) and will ensure it ever after. The leaves are first affected, then the canes, then the fruit. Some fruit has the black rot only; others show first fungus on the fruit, and by the 7th year, both may be found on the same bunch. In all my examination I find the laterals pinched in and the bearing canes headed in.

The growing canes cut off at the top of the trellis, frequently from the highly philosophical reason that *it looks better*, and often for another equally sapient one, that it is a *favorite theory*, and has the sanction of many well informed grape culturists; and lastly, that *the experiment can only cost the*

life of the vine, and it is very easy to put out another. The latter conclusion is the only scientific and the only true one,—sure as death.

The grapes named by me above under the head of July 10th and 25th, were all purchased plants, now seven or eight years old, and have been up to and including the last year, pinched and summer pruned *recundum artem*. Those named under the head of August 10th, with few exceptions, were from cuttings and strong buds cultivated by myself, and never pinched-in or mutilated while growing. The pruning has been generally done in November, after the leaves have fallen, and in no case have either of them been covered during the winter.

Why then, may I ask, should we make every grapevine fit its iron-bedstead (trellis)? Why must the Delaware and Rebecca be over stimulated to make them grow to the proper length; while the Concord and Isabella are to be headed off for overgrowth? Some of the new varieties show no disease as yet, because the time has not come for its development; but depend upon it with perfect reliance, that summer pinching and pruning will produce it in the healthiest plants. Let us then study the constitution and habits of the grapevine in our climate. Let us remember that our hot days and cool nights are essential to the perfection and ripening of the fruit; that if the foliage is taken off by pinching, it has the same effect as removing the leaves when further advanced; that more or less leaves are scorched by our August sun, and if they fall, the remaining ones are needed to protect the fruit, and that nature provides no more than are necessary for that purpose. Let us practice this natural and rational method taught by the growth of native vines in their native woods, and by cultivated ones on high trellises and tree tops, where we cannot easily get at them, and let us report results of our observation to the *Horticulturist*.

Vail's Gate, Orange Co., N. Y., Aug., 1865.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

BACK VOLUMES OF THE HORTICULTURIST.—We can supply but a very small number of back volumes prior to 1864. Those we have can be had post-paid, bound in cloth, for \$3 per volume, except for 1854, '55, '56, and 1857, which we will furnish bound and post-paid for \$2 50 per volume. We may possibly be able to make up one entire set, twenty volumes, and two sets from 1854 to 1865 inclusive, twelve volumes.

We should be glad to buy volumes for 1853, 1858, 1859, 1860, 1861 and 1863, in exchange for new subscriptions.

Vol. 1864, bound and post-paid and subscription, 1865, \$4 50.

Vol. 1864 and 1865, bound and post-paid and subscription, 1866, \$6.

KITTATINNY BLACKBERRY. — We are indebted to E. Williams, Esq., of Mont Clair, N. J., for a box of this fruit, which is large, handsome, and though not quite ripe, fine. On page 271 of our volume for 1863, will be found an illustration which conveys a good idea of the size and form of the berry. It somewhat resembles the Dorchester, being longer and of less diameter than the New Rochelle. We do not know in what way this variety originated, but presume it is a seedling of some of our native kinds found growing wild. We regard it as an acquisition to the blackberry family.

CURTIS' PRAIRIE MOWER. — We have been using, this season, in cutting our hay crop (50 tons) Curtis' Prairie Mower. This machine is operated on an entirely different principle from any other that we know of,

being that known as the Cam motion; the machinery is of the simplest description, and the labor of the team easy to perform. The land cut over, and the character of the grass, was such as to test severely the merits of a mowing machine, and we believe that any machine that will do this work in the same clean and expeditious manner, and with such ease to team and driver, must be a good one. These machines are manufactured by the well-known firm of E. A. & G. R. Meneely, West Troy, New York, makers of all the finest church bells in the land, and the price is less than *one-half* of that asked for any other of the leading machines. We are of the opinion that it will cut in a handsome manner any field of grass that a man of good sense would deem it advisable to put a machine into: furthermore it embraces the elements of one of the best One-Horse Mowers yet to be introduced to the public.

THE PENNSYLVANIA HORTICULTURAL SOCIETY propose to hold a grand Horticultural Exhibition, in the City of Philadelphia, on the 27th, 28th and 29th of September next, under a large pavillion or tent, no hall in Philadelphia being large enough to accommodate the immense throngs that attend these displays. The Fruit Grower's Society of Eastern Pennsylvania are invited to meet with them, and their discussions will take place in the hall of the Pennsylvania Horticultural Society, corner of Broad and Walnut streets, and begin on the 26th September. Tables will be set apart in the grand display for their collection of fruits, which have generally been very large and interesting. This last society embraces all

the principal fruit growers of Pennsylvania, and their proceedings are published yearly.

We are indebted to J. E. Mitchell, Esq., Chairman of the Fruit Committee of the Pennsylvania Horticultural Society, for a copy of their proceedings and programme for the year 1865. We have long wished to be able to attend a horticultural display of this character, and if our closely occupied time will permit, will venture to run over and take some notes.

SECKEL PEARS.—We have received (Aug. 14) from Mr. A. D. Webb, of Bowling Green, Kentucky, a box of very handsome Kentucky grown Seckel Pears, which reached us in prime order, and have been the admiration of all who have seen them. The Seckel Pear is justly esteemed about the finest of this class of fruit, and if we could add, in this section, the size and color which Kentucky soil and climate can do, we should be very close to perfection. Such pears would command a very fancy price, just at this time, on Broadway, and indeed, the possession of some of these specimens was highly prized by several of our best connoisseurs. Raising such pears must be a very fascinating pursuit.

THE THIRTY-SIXTH ANNUAL FAIR of the American Institute, of the City of New York, will be held in the spacious Armory of the 22nd Regiment, on 14th Street, in the City of New York, from Tuesday, the 12th day of September, to Thursday, the 19th day of October next. Every effort is being made, with the confidence of the management, to present to the American people an Exhibition that will surpass anything heretofore held, in extent, variety and grandeur.

THE THIRTEENTH ANNUAL FAIR of the Indiana State Agricultural Society, will be held at Fort Wayne, Indiana, October 2d to 7th inclusive, and in connection with it the Fair of the Indiana State Pomological Society.

THE EFFECT OF STRIPPING A COUNTRY OF ITS TREES.—The summer heats are beginning to dry up the springs and brooks which were lately so full and noisy, and the attention of observing people is again turned to the fact of the diminution, year by year, of the quantity of water in our streams at certain seasons, in consequence of stripping the country of its trees, and converting the forests into pastures and tilled fields. Almost everywhere our rivulets and rivers show, by certain indications in their channels, that they once flowed towards the sea with a larger current than now. If we go on as we now do, we shall at length see many of our ancient water-courses as nearly obliterated as Addison found them in Italy, when he wrote:

"Sometimes, misguided by the tuneful throng,
I look for streams immortalized in song,
That lost in silence and oblivion lie,
Dumb are their fountains and their channels dry,
Yet run forever, by the Muses' skill,
And in the smooth description murmur still."

This denuding a country of its trees has made the rivers of Spain for the most part mere channels for the winter rains. The Guadalquivir, which some poet calls a "mighty river," enters the sea at Malaga without water enough to cover the loose black stones that pave its bed. The Holy Land now often misses the "latter rain," or receives it but sparingly; and the brook Kedron is a long dry ravine passing off to the eastward from Jerusalem, to descend between perpendicular walls beside the monastery of Mar Saba to the valley of the Jordan and the Dead Sea. Mr. Marsh, in his very instructive book entitled "Man and Nature," has collected a vast number of instances showing how, in the old world, the destruction of the forests has been followed by a general aridity of the country which they formerly overshadowed. Whether there are any examples of frequent rains restored to a country by planting groves and orchards, we cannot say—but we remember, when traveling at the West thirty-three years since, to have met with a gentleman from Kentucky who spoke

of an instance within his knowledge in which a perennial stream had made its appearance where at the early settlement of the region there was none. Kentucky, when its first colonists planted themselves within its limits, was a region in which extensive prairies, burnt over every year by the Indians, predominated.

More than forty years since a poet of our country, referring to the effect of stripping the soil of its trees, put these lines into the mouth of one of the aboriginal inhabitants :

"Before these fields were shorn and tilled,
Full to the brim our rivers flowed ;
The melody of waters filled
The fresh and boundless wood ;
And torrents dashed, and rivulets played,
And fountains spouted in the shade.

"Those grateful sounds are heard no more ;
The springs are silent in the sun ;
The rivers, by the blackened shore,
With lessening current run.
The realm our tribes are crushed to get
May be a barren desert yet."

The causes which operate to make the rains more frequent and the springs more regularly full in a well-wooded country are probably more than one. Under the trees of a forest a covering of fallen leaves is spread over the ground, by which the rains are absorbed and gradually given out to the springs and rivulets. The trees also take up large quantities of this moisture in the ground, and give it out to the air in the form of vapor, which afterwards condenses into clouds and falls in showers. All the snows, likewise, that fall in forests are more slowly melted and sink more gradually and certainly into the earth than when they fall on the open fields. On the other hand, the rains that fall in an unwooded region run off rapidly by the water courses, and that portion of them which should be reserved for a dry season is lost.

In some parts of the country, with a view of supplying the deficiency occasioned by the gradual diminution of water in the streams, they are beginning to resort to the old method of collecting the rains into reservoirs. In a part of Massachusetts con-

tiguous to this State, the county of Berkshire, the owners of the paper mills, on what is called the Windsor Branch of the Housatonic, have already begun the construction of a basin on that stream, at a spot in Windsor, just above a series of cascades sometimes called Windsor Falls, and sometimes the Wacannah Falls. Here, the mouth of a small valley, through which the stream descends, is to be closed by a wall of massive masonry resting upon a stratum of the original rock. No mound of earth would answer the purpose, nor wall of stone resting upon earth, since, if that were by any possibility to give way before the water pressing against it, in a time of copious rain, a flood would be let loose which would carry destruction to the villages below. By this reservoir a hundred acres or more will be covered to a great depth ; and as it is the centre of an extensive watershed, it will be filled in rainy weather in a very short time.

This example will probably be followed in other parts of the country by those who desire to secure a supply of water for their mills in such a season as we had last summer, when the want of water was very severely felt.—*N. Y. Evening Post.*

A HINT FOR THE LADIES.—A FEW WORDS ABOUT FLOWERS.—In the *London Society* for June there is an article on "Flowers and Foreign Flower Fashions," in which the writer describes the floral features of Paris, and gives these hints about flowers for the room :

"I must record the trellises that are covered with growing ivy, and that stand all summer-time in front of the empty hearth. In winter, I have seen them moved merely to the window. These long boxes have a trellis attached at the back and ends. A plant or two of ivy is enough to twine over the trellis ; and then, through all the season, a succession of flowers is kept up, in a way that is most effective—and to me the most satisfactory. But then I never can bear to think that things have no roots when they look to be growing. A range

of hyacinth glasses, however, are in the box. The glasses are, of course, completely concealed by the moss; and in each of these said glasses is a tightly-bound bunch of something—it may be asparagus leaves, as I have described just now, or it may be Japan lilies, or still oftener gladioli. Either of these flowers is perfect for such uses. The tall white lily also is exquisite in this way; only, of course, for a drawing-room its perfume is far too powerful; though, when such things are used, as in Paris, to place at the side of altars, nothing can be more lovely than these tall and most pure white lilies.

"The blue Michaelmas daisy comes in well for these stands too; but as it is always well to describe one definite pattern that is known to answer, I made a special note of one both good and attainable. A common green-painted box, like our mignonette boxes (of course this should be lined with zinc, or at least made without holes, the former plan being desirable for the drawing room carpet), about eight inches deep, and say ten wide, a slight cane trellis, looking like rods for basket-work, merely stained dark green on the back and ends, coming about as high as an ordinary chimney-piece; ivy trained over the trellis, to cover it a good deal, but by no means thickly, simply to wreath about it, especially at the edges; then the only flowers in this really effective stand were alternate hyacinth-glasses of blue Michaelmas daisies and of scarlet gladioli, with, between them, some pots of fern or grass, or of asparagus leaves. The ivy itself, I was told, had, upon emergencies, been cut from the woods too, and brought in and put in glasses, and trained to look all natural. And, after all, it is well to know this for any quickly got-up decoration, or for a screen to shut off some unused doorway or ugly view at short notice.

"By-the-by, too, at this season, all the trees in fresh leaf may be used just like holly in winter, by way of decoration, only by putting the cut end of the branch in a

jar with water and charcoal, and then closing the mouth with a lump of the potter's clay. What can be more lovely than horse-chesnut or acacia?

"But, in a stand like that which I have described, observe the good management—the tall flowers, not over *recherché*, being filled up with shrubbery, sort of things in perfect keeping with their style.

"Bunches of holly, also, are remarkably good and effective in all such cases. In fact, for the use of holly one must go to France for a lesson. It comes in at any time, and is used as a brilliant flower—and, indeed, the bright leaves and red berries are such as few flowers can deaden.

"I have seen the boxes just described filled up entirely with the ivy-grown trellis, branches like small shrubs of holly, some tall and tapering, others low and spreading; and with some one white flower, generally the single, large-fringed Chinese primroses, these being, however, comparatively few—perhaps three pots only put in amidst the holly; and the effect was perfect—warm, and green, and graceful and *distingué*—for somehow the holly is very aristocratic, and adapts itself to all circumstances with most perfect ease and grace.

"Much green with a little color is a rule that has a wide reign; and also it is remarkable how rarely one sees one color, but crimson and buff roses, violet and pink, pale sea-green and rose-color, or any of these, with white. This seems the prevailing thing as much in dress as in flowers, and as much in rooms as anywhere. But then, Parisians do compose room, and toilet, and flowers, all as a sort of picture."

LETTUCE is one of the most valuable, yet one of the most neglected, garden vegetables grown by farmers. Many who pretend to grow it only obtain a tough, bitter weed. When properly grown its leaves are tender and palatable to almost every one, as soon as large enough to eat; and when grown into solid heads it is a most delicious food for men or animals. There is nothing that

can be grown for summer food for poultry at greater profit than a crop of lettuce. It thrives best in a light, rich soil; a soil that is rich from prior cultivation rather than from the immediate application of manure. If it be wanted quite early—and that seems desirable—the seeds must be sown in a hot-bed in March, and transplanted in April in a spot favorably protected from cold winds; and even here it may need occasional covering. It only requires proper cultivation after this to secure a crop. Allow sufficient room between the plants for them to head out without crowding each other, and an occasional evening watering if the weather be dry. Some of the market gardeners start the plants in autumn, and preserve them over winter in a cold frame, and transplant them to a hot frame in spring, and thus have large heads in market in April. It is a good way for a farmer to prepare a bed deep and rich in autumn, and sow the seed so late it will not vegetate, and cover the ground with coarse manure, to be removed early in spring, when the plants will get two or three weeks the start of seed sown after the frost is out of the earth. The following named varieties are the best: Early White Butter or Cabbage, the Early Curled Silesia, Early Tennis Ball or Rose, and the Imperial Head, or Sugar Loaf.—*Tribune*.

CABBAGES—HOW MANY PER ACRE.—The great cabbage growers about New York City generally calculate upon 10,000 heads per acre, allowing four superficial feet to each plant, which gives a surplus of 3,560 feet for missing plants. We suppose the crop may average 5 cents a head, giving \$500 an acre, which, considering it is a second or third crop of the season, affords a pretty good return. Cabbages often follow peas, with which radishes or early lettuce has been grown; and ground from which an early crop of potatoes has been taken is often planted with late cabbages. The soil for this crop must be rich and manure used unsparingly. Hog manure is not approved

in this vicinity; it is said that it produces "club footed cabbages." The gardeners prefer rotation for this crop, though we have known good cabbages grown upon the same spot a dozen years in succession. Near a city there is no doubt about the profitability of the crop; and we believe it a valuable one for food for cattle and sheep. It increases the flow of milk, but it does not improve the quality. Irrigation is valuable where cabbages are grown, as they require a vast quantity of water as well as manure, with deep tillage and thorough cultivation.—*Tribune*.

THE CRANBERRY.—The cranberry plant is a low, trailing shrub, with very small, smooth, unserrated leaves and bright rose-colored flowers, having a four-toothed calyx and a corolla deeply cleft into four segments, which curve backwards like those of the common nightshade; a flower to which, in shape and size, they bear much resemblance, though differing in many other respects. They grow in small clusters at the ends of the branches, one blossom on each long curved flower-stalk; and when, in due course, they are succeeded by the crimson berries drooping at the extremity of these slender bending stalks, like the head of an aquatic bird at the end of its arched neck, the reason becomes sufficiently apparent why our forefathers bestowed on them the name of *crane-berries*. The plant belongs to the natural order of *Ericaceæ*.

DEATH OF SIR JOSEPH PAXTON.—Joseph Paxton, known all over the civilized world as the architect of the London Crystal Palace of 1851, and the inventor of a system of building which has been imitated in numerous large cities, and finds its noblest culmination in the Sydenham Crystal Palace, has lately died in England, where for some time he has been in infirm health. He was for many years a landscape gardener for the Duke of Devonshire, father of the present Duke. Having under his charge the celebrated pleasure grounds at Chats-

worth, he built there, from iron and glass, a large house intended for the protection of tropical plants and trees. It is said that the idea was suggested to him by the structure of a leaf.

At this time the International Exhibition scheme was under way, and Paxton presented a plan for the building, which was adopted. From that time he became famous. He grew rich, was made a knight by the Queen, and was elected to the British Parliament. Having risen from the people he always remained their friend and was on the liberal side. He was sixty-one years old at the time of his death.—*Post*.

THE first pink worthy of notice was raised in the year 1772, by Mr. James Major, who was then gardener to the Duchess of Lancaster; previous to which there were but four sorts, and those of very little note, being cultivated only for common border flowers. Mr. Major having saved some seed in 1771, he reared several plants, which, blooming the next season, one out of the number proved to be a double flower with laced petals, at which he was agreeably surprised, although he considered it as being only in embryo, and the prelude to some further advance, to be developed at some future period, which is now verified by the rapid strides this beautiful flower has made within a few years. Mr. Major also informed me that he made his discovery known to a professional gentleman, (a florist) who came to see it, and offered him the sum of ten guineas for the stock; but he declined the offer till he had consulted more of his floricultural friends, which having done, one gentleman told him he had done perfectly right in not accepting the offer, and advised him to increase the stock for the ensuing year, and then offer them for sale to the public. He took the hint, and accepted this advice of his friend, and sold it out to the public at 10s. 6d. a pair, under the name of Major's Duchess of Lancashire, the orders for which amounted to the sum of £80. One order

to a single individual of forty pairs was delivered at the above price; and I think I may venture to say that no person has ever been able to make half that sum by any new pink since.—*Gardener's Weekly, Eng.*

OYSTER BAY ASPARAGUS.—A HINT TO ASPARAGUS GROWERS.—So superior in size and tenderness is the asparagus grown at Oyster Bay, Long Island, that while the common small grass has been selling at wholesale from 15 to 30 cents per bunch the season through, Oyster Bay grass has ranged from 25 to 50 cents, most of it at 35 and 40 cents; and the demand is far greater than the supply. We have seen a little very fine asparagus raised in New Jersey; but the majority is quite inferior to that grown on the Island. Why this difference is the query of growers; and not a few persons have visited the asparagus fields of Oyster Bay to ascertain their modes of culture, but have succeeded no better in subsequent trials. We advise them to try this method and report the result to *The Tribune*: Every one has noticed in a field or bed of asparagus that some shoots are at least double the size of the others, and that those roots gave large shoots each year. Let them mark these shoots and save seed from them alone, and raise their own roots. Select the strongest growing of these seedlings to raise future seed from; and if there is not a marked improvement in a few years, then the law which holds in the animal creation, and which Mr. Hallett proved was equally efficacious in "breeding up" wheat, fails in asparagus. We are firm believers in the axiom that "like begets like."—*Tribune*.

BIRDS.—It is no argument for destroying the birds that they do not rid us entirely of the worse enemy. We know, by abundant evidence, that the small birds which most frequent our gardens and dwellings, do dispose of an infinite number of caterpillars, grubs, flies, and worms, in feeding their young as well as themselves. That there

are still more than they can dispose of is no wonder, considering the destruction of birds which has been going on now, faster and faster, more and more spitefully for years past. It should be remembered that the insect increase goes on at an accelerated rate after the natural check is once impaired. The escaped prey of one pair of birds will not grow only up to spoil a half dozen vegetables, or specimens of fruit, but will bring forth a progeny which will ruin scores or hundreds of plants, and leave enough heirs to run through the property of many more. The horticulturist had better endure the depredations of the birds than the wholesale mischief of the wire-worms, slugs, larvæ, moths, &c.

A KITCHEN GARDEN OF 800 ACRES.—The *London Agricultural Gazette* gives a very interesting account of a tract of land between Plaistow and East Ham, on the east side of London, occupied as a tenant by Mr. W. Adams, whose father and grandfather before him had been in the same business on the same soil. "Thirty, fifty,

even seventy tons of cabbages and greens in two or three successive crops within the year, twelve to twenty tons of carrots, eight to a dozen tons of potatoes, followed by ten to fourteen tons of onions, and these again succeeded by greens and cabbages, are yielded per acre. As soon as one crop is off another is put in; the only respite is in the winter time, before the onion crop, when it is left bare for a season's frost.—The only rest it ever gets is an occasional crop of wheat or peas." There is another side, however, to the picture. The owner has contracts for manure with many of the largest stables, breweries, and cow-houses in London, and it is sometimes applied in the enormous quantity of 80 tons per acre. The land "increases annually in fertility." The total annual payments on the 800 acres are about \$100,000, (£20,000) including besides manures, \$30,000 for labor, upwards of \$25,000 for "rent, rates, tithes and taxes," \$7,500 for commissions to salesmen, &c. What the sales amount to is not stated. Seventy horses are employed.

CORRESPONDENCE.

TANGLEWOOD FARM, July 16, 1865.
EDITORS HORTICULTURIST, New York.

I am a small farmer,—both in the extent of acres and in personel—and write you a few of my grievances, in hopes that you may spare time from, or at least add to your editorial labors the perusal of this note, and give me through your columns the benefit of your encouragement. Your journal has been of great value to me, and I feel myself already obligated to you for the many useful hints drawn therefrom.

It was the intention of the Supreme Ruler that I should become a devotee to the science of Horticulture, and her sister Agriculture; so my thoughts ran, on a certain morning last winter, and as with me to think was to act. I accordingly straightway became a devotee, and began to cast about me for the means of gratifying my

taste. To be sure, there was my "back yard" at home, but that was insufficient, entirely to small.

As I was only junior partner in a not very large jobbing house, in one of our small cities, my ready means were rather limited, and as a natural consequence I cast my eyes to the "*West*" for a home which should combine the qualities requisite to aid me in a beginning, and yet not go beyond my purse in its cost.

My star—whether lucky or not, I have never discovered, as my lot seems to be about the same as other mortals—led me to a most beautiful prairie in Missouri, only a short distance from the aristocratic old city of St. Louis, in fact, so near that I can reach it in two hours by rail.

Having found the place, the next thing was to prepare to begin business.

Having consulted my wife, we came to the unanimous conclusion that we would buy none but the best articles, even though we bought less of them.

I had already supplied myself with quite a number of the standard works pertaining to the subject, and had slightly read them all, and thoroughly a few.

I bought a pair of Horses—of a dealer—and a fine Durham cow,—with a pedigree as long as the moral law—and started for our new home.

Arrived there, the first discovery of importance was, that *our cow was dry*; the wiseacres,—they're always ready—said 'twas just what was to be expected, that "*them ere blood ceours want no 'count, no how,*" and that I'd "*better sell her fur beef.*"

What, sell an animal for such purposes, in whose veins coursed the blood of many generations, whose ancestors were the noblest where all were noble? No; I could not hear to that, but my wife said that "baby must have milk to drink;" so another cow, and better, I was assured, was bought. She had a calf, and the milk which was shown me by the honest German women, was very rich, and in good quantity. I still had faith in my Durham, and by continually "stripping" at her, she again yielded her usual allowance of milk,—about a gallon per diem—but beyond that she would not go.

I next discovered that my horses were baulky, and that my harness was entirely too light for the work. My plowing could not stop, so I was obliged to hire one of my neighbors to do it for me, much to the merriment of the balance of them, I suppose.

I went next and bought an "old mare," that was recommended as being *very steady*, so she was; she would work tolerably well for a half day, and then "give out." She was then literally steady,—in her tracks—for she could hardly be induced to move, even to go to the stable.

I will not burden you with the recital of the trouble with servants, and how my oats

did not yield as much by 15 bushels per acre as my neighbors, &c., &c.

I have (this spring) read the work, which, of all others I should have read first,—"*Ten Acres Enough*"—and literally made it as the author did, enough for the kind of business in which I was about to engage. We are now satisfied that we have attempted to do too much farming for the stock on hand (of knowledge and capital).

My original intention was, to devote my entire farm to fruit, or at least all but enough to raise feed on for *my stock*. I have been partly dissuaded from it this season, but will return to the original idea with renewed energy, and I hope an increased capital.

Sad to relate *all* the *early* apples in my orchard are *Gennetings*.

I am only showing you my commencing year, and how many discouragements an amateur is likely to meet with at first.

My Blackberries are now doing finely, (in fall bearing) and my Cherries did well; but my Raspberries, Currants and Gooseberries were an almost entire failure—from the neglect of my predecessor, I think,—to his disgrace be it said, he did not have a strawberry on the place, but those which grew wild in the fields. I have some of those under cultivation, and should they prove as good as they promised in their wild state, I'll send you a sample.

Notwithstanding all these discouragements, I am satisfied each day more and more, that my adopted profession is the one for me to follow, and hope that in another year I may be able to give you a better record.

Hoping that your valuable Journal will fire all with as true a love for the science as it has me, I am

Yours, respectfully,
CHAS. H.

Naylor's Store, St. Charles Co., Mo.

CALUMET, ILL., May 20, 1865.

Mr. A. S. FULLER, author }
of GRAPE CULTURIST. }

Dear Sir,—A few days since, receiving

an earnest invitation from an amateur vineyardist in Northern Indiana, to visit his grounds, with a view of pointing out and correcting, or guarding against, if possible, the havoc some, to him unknown enemy, of the insect tribe—as he supposed—was making with his vines. I complied, and found a fine vineyard of two years old plants set out last spring,—a year ago now—had last fall been cut down to two buds, and received a judicious counter covering, but his borders settling during the winter had carried down with them his vines which were well rooted, and left a basin around the stem of each vine, say three to four feet in diameter. On filling this basin partially, the lower bud pushed from below the surface of the ground, and in almost every instance this shoot had been cut off by the common cut worm. The shoot of the upper bud being a little harder from its exposure to sun and air, had, in many instances escaped; yet, on many of these to the height of six to twelve inches up the new shoot, the worm had ascended and continued his destructive work. I at once caused a thorough search in and around all the vines, and a hard crushing of the worm. In and immediately around many hills we destroyed upwards of fifty worms, and at once encased the vine with a hastily constructed box made in the shape of a triangle or V, of two pieces of inch boards one foot long and one foot wide for sides, and one strip of clap-board one foot long and six inches wide across the bottom of the front. These boards were all sharpened a little to settle in the ground an inch or so, and a piece of mosquito netting drawn over the remaining open space, the wide part of course opening to the south. This proves effective protection against the cut worm, and the insect enemies of the vine, like the flea beetle, which on these sandy lands, at this season, often visit it. This will now, I think, give the secondary or accessory buds a chance to push and preserve the life of the plant. New beginners are this spring troubled to a very great extent in their vineyards with

this cut worm, my own grounds not exempt; but my long experience and ready means to deal with all enemies of this nature have rendered their efforts of but little injury. The trouble seems confined to sandy soils, and complaints have reached me from Southern Wisconsin, Michigan and Northern Indiana and Illinois. If you would draw attention to this through the columns of the *HORTICULTURIST*, it would do much good. The extensive circulation of your valuable *Culturist* gives your name an authority which will make your suggestions heeded. Not knowing the name of the post-office where you have moved to in New Jersey, I send this to care of Messrs. Woodward. Make any use of this communication you see fit; your own experience will, no doubt, enable you to point out a more effectual remedy against this than I could.

With much respect, truly yours,

JAS. T. DURANT.

ON confining these worms in a glass jar, I find of all the leaves given them, that of the grape they most prefer and greedily devour. Every mail now brings me inquiring letters how to protect the writer's vines from the cut worm. Since your book made its appearance, vineyardists have very generally cut down their vines in the fall to two buds. The vineyards hereabouts being planted but recently, and are, of course, mostly of young vines. I have found the worm at 3 o'clock in the morning at work, not only cutting the stem, but devouring the leaf 18 inches above the ground.

J. T. D.

TO J. M. MERICK.

Grape seeds need cracking to make them come up quickly. In clearing land the wild grape comes up plentifully where brush have been burnt. This suggested the idea of cracking my grape seed; so I took some Delaware seed, tied them in a rag and buried them an inch or two for the winter. In the spring I broke the small end off so I could just see the sprout, planted them in

a small pot near the stove, kept them watered well, and in a week or two one after one was showing his crooked neck above the ground.

I hope, in a few years, you may see the great American Seedling, just as if one grape could be great when we have so many good ones already. Grape seedlings are equal to apple seedlings, and who expects to get anything in the apple line very much superior to what we have. We have a seedling grape in Ohio, which has probably the largest bunch and berry combined of any American seedling; still it lacks in quality, and I'll wager two cents that the Great Agriculturist Strawberry is not equal in flavor to Hooker or Burr's New Pine, only with those that have plants to sell at 75 cts. each.

There! a boy says, this minute, "I like the Catawba better than the Delaware; the Delaware is too sweet." We have lots of boys that like sour fruit as well as sweet. Some people say they like the Isabella better than the Catawba. I expect, according to the philosophers, (Draper, Spencer, Seward,) the public *taste* is becoming more and more *complex*, and no doubt we shall be ready for anything new in the grape line, and if not ready some of the learned Doctors can differentiate new ones.

Ohio, May 6th.

A. J. M.

EDITORS OF HORTICULTURIST:

Dear Sirs,—In your August issue, I notice an article entitled, "More Neglected Flowers," which is calculated to mislead your readers. Your correspondent is right in considering *Corydalis aurea* a rare plant; but he then goes on to describe a different species, (*C. glauca*) and the whole description makes it evident he has never seen the plant of which he writes.

C. aurea is a low growing plant, never attaining the height of *C. glauca*. The whole flower is golden yellow, no "red, orange, or pink" about it. *C. glauca* is *not* rare, but a common inhabitant of dry, rocky hills; is by no means confined to

"Roxbury, Mass.;" but may probably be found in every town in the State. The plant described by Mr. Merrick, is the same he exhibited at one of the weekly shows of the Massachusetts Horticultural Society, in May last, under the name of "*Seprosia Virginica*," than which no plant can be more unlike.

As he has at last somewhat approximated to the true name of the plant, a helping hand may be of use to him.

The Indian Turnip is by no means uncommon in cultivation; we can name many gardens where it may be found.

The Side Saddle Flower (*Sarracenia purpurea*) is of easiest culture; transplants well, and is very ornamental as a parlor plant if set in a vase of wet moss; the leaves are freely produced in winter under this culture.

Calypso borealis can hardly be called a "neglected plant." It is our rarest native orchid, a plant so scarce that nature has not given cultivators an opportunity to neglect it. Not one botanist in a hundred has ever seen anything but a dry specimen.

Mr. Merrick has been singularly unfortunate in his choice of plants, and very careless in the *information* he imparts. The primary qualification for a teacher is to be familiar with the subject on which he writes.

HARVARD.

{ BRIGHT BANK, ULSTER Co.,
N. Y., July 12th, 1865.

MESSRS. EDITORS,—In the fall of 1861, I prepared a border on a bank with a southern exposure. I removed sufficient soil, which was clay covered with sand in spots, underdrained it, and composed my soil 14 feet wide and 3 to 4 feet deep.

I made an upright trellis 6 feet high, then carried it horizontal 10 feet till it struck the bank. I then planted my vines alternately, Delawares and Dianas $4\frac{1}{2}$ feet apart and 4 feet from the trellis. The second year I dug a trench to the trellis, and buried them the first week in June, when they were in blossom. The growth was very strong, and the Dianas I pruned and

trained over the horizontal trellis, and the Delawares on the Thomery system, occupying with the two arms the nine feet between the Dianas.

Last year I allowed them to bear moderately, and this year, as to quantity, I am permitting them to take their own course. As I walk under the Dianas, I never saw so beautiful a show of fruit, as the bunches hang down from the trellises. I was led to count them, and I found on one Diana vine 169 bunches; the largest bunches and largest berries that I ever saw of the Diana when full grown; and on the Delaware, immediately under, there were 93 bunches. As I am a novice I do not know if this is very large or not, but I am quite certain they *show* more than I have before seen. There are 11 Dianas and 10 Delawares, and the vines will be 4 years from planting this fall. J. B. S.

EAST ROCKPORT, Ohio, July 17, 1865.

MESSRS. GEO. E. & F. W. WOODWARD,

Dear Sirs,—You probably suppose that one dealing in Patent-rights and manufacturing Self-Operating Gates, would have no taste or love for rural pursuits. I am at least an exception, and find that these pursuits are not only delightful and pleasant, but profitable. My inventive genius will some times come out and must be taken care of, especially when it is a "valuable invention."

I wish to call your attention to a very late cherry that I have on my place that is just getting ripe this, the 17th July.

The fruit is very large and smooth, and the curculio does not trouble it; color light red; flavor like the May Duke; the tree is a great bearer. Prof. J. P. Kirtland thinks it is not described and says: "It is very valuable on account of its lateness." It is at least ten days later than any in this vicinity, and I think it is a new kind.

When clearing off the fruit trees and digging up my yard preparatory to planting ornamental trees, I saved what I thought to be a morello sprout and set it out, which

proves to be what I have described above. What do you think it is?

My Grapes never looked better.

Very respectfully,

E. NICHOLSON.

BLOOMINGTON, ILL, July 20, 1865.

MESSRS. WOODWARD,

HORTICULTURIST, 37 Park Row, N. Y.

How in the very midst of life we are in death! C. R. Dorman, Ex-President of the State Horticultural Society, and one of the earliest and best known of our Western Nurserymen, died yesterday the 19th, at 9 o'clock, A. M.

None more active and earnest and pure hearted and better beloved in all the craft,—we mourn his loss most bitterly. Ill but a few days; cut down so suddenly in the very prime of life and usefulness it is a great affliction. With his large family circle there will be thousands to join in grief and sympathy, for none of us see how to do without him.

In grief, F. K. PHOENIX.

HIGHTSTOWN, N. J., Aug. 21st, 1865.

GEO. E. & F. W. WOODWARD.

Gentlemen,—I send you three small bunches of Adirondac Grapes. The bunches are small, but I presume it is owing to bending down the vine in order to make all the layers I could. It ripens with me before the Hartford Prolific and of much better quality.

Truly yours, ISAAC PULLEN.

These grapes were ripe, sweet and tender to the centre when received, August 22nd.

Ed.

THE MAN WITHOUT A COUNTRY.—This remarkable narrative, upon its original publication in the pages of the *Atlantic Monthly*, attracted more general attention and comment than any article printed for a long time. It is now republished in separate form, by general desire, and at a price (ten cents a copy,) which will give it universal circulation at this period.—Boston, Ticknor & Fields.

THE HORTICULTURIST.

VOL. XX.....OCTOBER, 1865.....NO. CCXXXII.

GATEWAYS AGAIN; AND RURAL CARPENTRY.

ON turning back to the HORTICULTURIST for March—I trust the reader preserves a file (as he certainly should do)—he will perceive, from the drawing of my friend Lackland's grounds, that he has need of three principal gateways—a small one for the footpath, being the entrance nearest to the village; a larger one for his drive, and a third opening, for his grass field. This last he will not have very frequent occasion to use; for that reason the gateway should not be very striking, or seem specially to invite entrance. Supposing that the occupant has availed himself of the old walls about the premises to build a substantial stone fence along a considerable portion of his front, I should advise that he mark this field entrance by two substantial columns built of the same material, and place between them a gate or movable panel of fence, constructed of cedar poles, or such other homely or lasting wood as may be most available.

I give a rough drawing of what I would propose.



Design No. 1.

I think that every one will admit that these columns have a tasteful effect, and add largely to the architectural character of the wall. And it is a great mistake to suppose, as many do, that such columns require hammered stone, or that it is requisite that they be laid up in mortar, and by an adept in masonry. All that is required is, that stones carrying fairly-developed angles should be laid aside for its construction—that the face of the column should project three or four inches from the surface of the wall in order to mark distinctly its faces, and that it be bound in firmly with such long

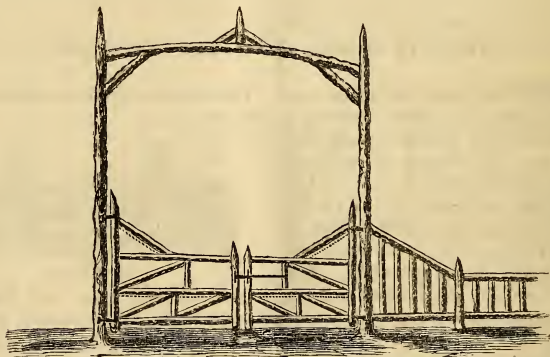
stones as are available. A boulder sufficiently round to crown the structure may be found in almost any rod of old country wall; and if it be well covered with lichens, so much the better. The great error in such attempts is in attempting too great nicety, which by contrast with the homely farm-work around it, offends more than it gratifies. In humble art, as well as in the highest art, there must be keeping.

But though finical nicety is to be avoided, and such hammering out of faces, as to increase largely the expense, and defeat the economy which should declare itself unmistakably in all rural decoration, there should be no sacrifice of solidity. A column that will not stand for years had better never be built.

The country wall layers, ordinarily are indisposed to attempt such work, either

doubting their own capacity, or considering it an encroachment upon the province of the mason. The consequence has been, in my own experience, that of some half-dozen or more which stand here and there about the fields at Edgewood, every one has been laid up with my own hands; and I may aver, with some pride, that after eight or ten winters of frost, they still stand firmly and compact. One only has lost its capping boulder, which certain errant boys could not resist the temptation to tumble off, that they might watch it's roll down a pretty declivity of an hundred rods, or more. I wish I had no more grievous charges to bring against errant boys.

For the entrance to the drive-way, supposing that my friend Lackland has plenty of cedar at hand, I give another design:



Design No. 2.

And I have this much to say in favor of it, that a similar one was erected at Edgewood nine years since, and its gates have swung back and forth a dozen times a day without, as yet, a single hammer's stroke in way of repair.

The dotted lines upon the right half of the gate indicate two half-inch iron rods which were passed through and fastened by a nut upon the longer upright sappling. Once or twice it has been necessary to give this nut a turn or two with the wrench, and this

completes the tale of the attention it has required.

The first panel (and part of the second) of the fence to which it is attached, is given to show its relation to its surroundings, and the perfect simplicity of detail which belongs to it. The posts are firm and cannot swag. The gates are light—perfectly braced, and held in place by the iron rods which pass through them. They bid fair to last until the sap portion of the wood (cedar) is fairly rotted away. The three

horizontal arms are inserted with tenons ; the braces are fitted only with the gouge, and made fast with wire nails. And here I wish to enter a plea for the wire nails, used all over the continent of Europe, but, as yet, little known with us ; though, I believe, they are to be found in the larger hardware shops of New York. The advantage of them is, that they can be driven without splitting the wood—that they can be clenched effectively, and—what is of importance in light work—they add very little to the weight. For the construction of interior rustic work of twigs and bark, they are invaluable. They may be found of all sizes, from that of a cambric needle (and a half inch in length) to that corresponding to our “ten pennies,” and lighter by two-thirds than these.



Design No. 3.

The third gate (No. 3) is equally simple, and, in way of ornamentation, has only its little rooflet. The design represents this as of equal width with the gate ; but a somewhat better effect may be secured by an extension of the roof some six or eight inches on either side, in which case, of course, the posts must be cut off even with the ridge, and finials of cedar sticks adjusted at either end. This bit of roof over the gateway gives not only the hospitable air, which I remarked upon in the previous paper, but serves to protect the rustic work from the weather to such a degree that the bark will hold fast for double the length of time. In all such work, great annoyance is given by an insect which devours the sapwood

under the bark, thus loosening the latter, and filling it with an ugly yellow powder. I have observed, in my own experience, that the ravages of this insect are much more decided and constant upon cedar cut in the winter than upon such as has been cut in the growing season of the year. The fact, however, may be accidental, and I must confess utter ignorance of the habits and tastes of this disagreeable grub.

The virtue of all such rustic work as I have commented upon lies in its exceeding simplicity, joined to great serviceableness. Home repairs do not tell badly on it ; the joints need not be arranged with mathematical precision ; the materials are near at hand and inexpensive ; the creeping vines cling to it lovingly ; it wears age with a veteran sturdiness.

I am by no means prepared to say that my friend Lackland will adopt my views on this head. I suspect that his country or city joiner, when confronted with the hints I have thrown out in these gate sketches, (they are really intended for nothing more than hints) will shake his head doubtfully, and lay before my friend some stupendous affair of carpentry, with an infinitude of mouldings, which, to his eye, is vastly finer. And I shall expect Lackland to yield to the charm of the rectangular elevations that are set before him ; or, if he absolutely insists upon the working up of what stray cedars, or other wood, may be about the premises, I shall expect his carpenter to make such a bugbear of the exuding pitch, and of the impossibility of bringing his square and his guage into requisition, and (if he goes on), to keep so resolutely by a determination to counterfeit, as far as possible, all the mouldings of his joiner work, that he will construct a cumbrous affair, at such great cost of labor, as will disgust my friend Lackland, and at such cost of simplicity as will disgust every tasteful observer.

What then ? There can be no doubt of the possibility of working this unruly material into tasteful forms, that shall have practi-

cal and economic uses ; but in the ordering of this matter, as in the ordering of a great many others connected with rural life, if the proprietor can put no zeal into his intention, and has no eye for the charms of

homeliness, let him abandon the pursuit. A good fence of white pickets, with gate to match, will keep the pigs out, and the young Lacklands in.

Edgewood, Sept. 1865.

GREEN-HOUSE PLANTS AND NO GREEN-HOUSE.

BY EDWARD S. RAND, JR.

WHILE almost every house in the country has its garden, comparatively few have a green-house, and yet every garden must depend much upon the green-house for its summer display.

Hardy perennials and annuals, though most desirable and comprising many beautiful and popular plants, do not fill every need, and we are driven to seek the aid of the numerous family of bedding plants for the adornment of our garden. In addition to these there are many green-house plants which add much to the attraction of the garden, if grown in pots, and judiciously interspersed here and there, either by sinking the pots or by placing them at prominent points, such for instance as turns in the walks, the centre of round beds, or the top of mounds. Now if we have a green-house, it is easy to have these plants and to winter them without trouble, but a green-house is a luxury which few can afford, and the object of our article is to show how we can produce, in a great measure, the same results without its aid.

Premising now that the object of a green-house is to merely winter plants for summer blooming, we may attain the same end by the use of means which are within the reach of all ; these are the cellar and the cold frame. The general use of the former is for wintering plants which will not bear frost, of the latter for plants which will bear a moderate degree of frost, but which suffer or die from the effect of the winter's sun.

THE CELLAR.

Almost every house has a cellar, and yet the great proportion are unfit for wintering plants. A good dry, light, frost-proof cel-

lar is as desirable a part of a house as a dining-room or parlor, and yet the cellar is generally a damp, low, ill-ventilated, dirty apartment, unfit for every purpose for which it should be adapted. The effect of such a cellar upon the atmosphere of the house cannot be other than hurtful, and thus deleterious to the health of the inmates, (this consideration is, however, aside from our subject) and for wintering plants they are useless, for no plant would survive a winter in such a place. A cellar for plants should be at least ten feet from floor to ceiling ; this will generally be quite deep enough to be frost-proof. The floor should be either clean gravel or cemented. If the location is damp, deep trenches should be dug all around and filled in with fine stones to draw off all water, and these trenches should, if possible, communicate with a blind drain that all water may be carried off. Light should be afforded from windows on the south, east or west, there should be no opening on the north ; these windows should be hinged at the top so as to afford free ventilation if desired. The cellar walls should be pointed ; the ceiling may or may not be plastered ; it is well to whitewash the walls. If there is a furnace in the cellar it is best to brick off a portion for the plants, as the constant heat would excite the plants to growth ; and sufficient heat in a cold night can always be afforded by leaving the door open between the two parts. In building, if possible, use only stone or brick for all portions below ground.

PLANTS FOR THE CELLAR.

These are mostly hard wooded plants, succulents and bulbs.

Soft wooded and stove plants seldom

succeed, the former continuing to grow and exhausting themselves in the production of weak branches which there is not light enough to ripen, and the latter dying for want of moisture; or should that be supplied, damping off for want of sufficient heat. We must not expect our plants to give us flowers, or even to grow, the main object of the cellar is to preserve through the winter, our plants for summer decoration; our aim should be to keep the plants as nearly in a state of rest as possible, and if we can, in the spring, take them out in as good condition as they were when we put them in in the autumn our cellar is a success.

Plants which are thus allowed a season of rest, grow with greater vigor during the summer, often doing better than those which have grown all winter in a green-house.

The winter treatment is very simple; once or twice a week the plants should be examined, any decaying leaves removed, and enough water given to prevent them from drying up. Different plants require different treatment, in this latter particular succulents need very little; once a month is sufficiently often for Cacti, Agave, etc.; but hard wooded plants, such as oranges, Indian fig, &c., may need water twice a week, and tender evergreens, such as Cupressus Lawsoniana, Yews, &c., need only sufficient to keep them from drying.

The temperature should range from 40° to 55° Fah; air should be given by opening the *sunny* window on clear warm days; care must be taken, however, not to chill the plants, and not to allow a cold draft to blow over them.

AGAVE AMERICANA, the American Aloe or Century Plant. This in all its varieties is one of the stateliest and most effective plants for summer decoration.

It is of the easiest management, requires little water and may be placed in the darkest part of the cellar. The plants should have large tubs, and all suckers should be removed as soon as large enough, and potted

to increase the stock; they are of slow growth and large plants are not common.

The variety with striped or variegated foliage is the most striking.

YUCCA.—These plants, like the Agave, are of stately appearance, and give a tropical effect; their chief beauty is in the foliage, though the flower is showy. They require a similar treatment with the Agave.

Y. aloefolia grows about three feet in height; Y. angustifolia, two feet; Y. filimentosa is hardy. Yucca gloriosa, four feet; Y. superba, ten feet. The varieties with variegated foliage are desirable.

The flowers of all are greenish white, produced on a stem many feet high in a close panicle.

AURACARIA.—The two species are A. imbricata, the Chili pine, and A. excelsa, the Norfolk Island pine; neither are hardy, but both can be easily wintered and are noble plants for summer decoration.

RHODODENDRON.—There are many varieties which are too tender to endure our winters. These, planted in tubs and wintered in the cellar, grow vigorously and bloom profusely. In the summer they should be set out in a shady place and not allowed to dry; in winter give only enough water to keep the earth damp.

AGAPANTHUS.—In a previous article we have given directions for the treatment of this fine plant. Give it a light place in the cellar, and if possible, where it will have a little sun—water enough to keep it from drying up.

HYDRANGEAS.—These need but little care beyond seeing they do not dry up or damp off.

OLEANDERS, (Nerium).—These will be at rest; care should be taken not to excite them into growth.

GRAPE MYRTLE, (Lagerstroemia).—Of the two species of this beautiful shrub, L. indica is the more common; L. speciosa is of more dwarf habit with rosy flowers. It should have rest in winter in the coolest part of the cellar; be re-potted when put

out in spring, (or it may be set in the border,) will grow vigorously all summer, and flower profusely in August.

POMEGRANATES, (*Punica*).—Treat as Oleanders. The double flowering varieties are very showy.

ORANGE AND LEMON TREES, (*Citrus*).—Give as much light as possible. They often begin to grow in March and April, when they should, if possible, be removed to the parlor where they will bloom profusely. During the summer a piazza is a more suitable place for them than a full exposure, as the sun is apt to affect the foliage, turning the bright green to a dirty yellow.

FICUS INDICUS, (INDIA RUBBER TREE).—Keep in the lightest and warmest part of the cellar—water moderately. This is a difficult plant to keep in good condition, the foliage often turning yellow.

CYCAS REVOLUTA, Sago Palm, (so called)—Water sparingly, and keep in as much light and heat as possible—if there is a part of the cellar very warm and light many of the palms, such as the various *Zamias*, *Latantias*, &c., may be wintered without difficulty.

These are but a few of the plants we may winter in the cellar. The care required to ensure success is trifling, and is well repaid by the summer beauty of the plants.

All cellar plants should be housed before the first sharp frost.

THE COLD FRAME.

This is a most important adjunct to a garden; there are many plants which we cannot have in full beauty without its aid, and many which are usually kept in a greenhouse, can, by this simple provision, be wintered with perfect success.

The cost is trifling, a few boards, nails and an old sash will give you all that is necessary. A larger outlay, however, is not thrown away. It is a good plan to construct the sides of masonry, stone capped with brick, and set deep enough to be below the frost line; lay a heavy wooden sill on this on which the sashes run.

These beds may be divided by brick partitions in larger or smaller compartments, and can be used for hot-beds or cold frames at pleasure. They are not very expensive when we consider their durability and the many useful purposes they may serve. A range of this kind in our own garden, sixty feet long, cost, (including excavating) a few years since, 125 dollars; but, at the present time, (Oct., 1865,) owing to the increased cost of labor and materials, such a bed could not be built for less than three dollars per running foot.

A cheap cold frame, which will answer every purpose for wintering plants, may be thus constructed: Choose two planks, each six feet long and running from 18 inches in width at the top to 12 inches at the bottom; at right angles to these nail two cross pieces at top and bottom of corresponding width with the width of the top and bottom of the sides, that is, the top piece 18 in. by 3 ft., the bottom 12 in. by 3 ft. We thus have the frame—on each side nail a strip of board projecting about an inch to hold the sash in place—our frame will then be 3 ft. by 6, which is the most convenient size, and will have a slope of six inches, which is necessary to carry off the rain. Choose a situation where the water will not stand in winter and set the frame close upon the ground, banking up the sides with earth firmly pounded down. If it is intended to winter the plants in pots the inside of the bed may be made hard—a thick layer of coal ashes makes an admirable ground to set the pots upon. If, however, the plants are to be set out on the frame, the bed must be of common garden loam.

The plants should be set on the bed about the middle of October, but the sashes should not be put on until the nights become very frosty. Water will not be needed, as usually at this season the ground is sufficiently moist; plants in pots may, however, require it.

On the approach of cold weather cover the plants with leaves, packing them close;

put on the sashes and cover these with a piece of matting, to prevent the sun from forcing the plants into growth, and leave all till spring. On the approach of warm days remove the leaves and water a little so the plants may start into a moderate growth before being transplanted to the garden. Care must be taken to protect from frost after the plants begin to grow. As a general rule, the first to the tenth of April is early enough to uncover cold frames.

Care must be taken not to winter field mice in the frames, where, if they once obtain a lodgement, they will destroy every thing in the frame.

PLANTS FOR COLD FRAMES.

In general, all the plants commonly classed as "half hardy," may be wintered in cold frames. We propose only to mention a few of these, however, which are particularly adapted for decorative purposes.

TRITOMA.—This is a genus of stately plants with liliaceous leaves and tall spikes of showy flowers. Although long since well known inhabitants of the garden, they have, within a few years, been prominently brought to notice and are now in great favor for planting in beds in lawns. They should be transplanted from the border to the frame about the latter part of October, and kept well covered with leaves. The different species differ but little in the color of the flowers, which in all are orange or scarlet tipped with yellow and green, but vary much in the season of bloom. With us, *T. Burchelli* blooms early in August, followed by *T. pumila*, *T. glaucescens*, *T. uvaria* and *T. serotina*.

CARNATIONS.—These should be layered after blooming, and about the last of September the rooted layers transplanted to the frame—the plants will become well established before the heavy frosts when they should be covered with a thick covering of leaves, the sash drawn on and left till spring; then transplant to the garden or bloom in the frame as may be desirable.

CHINA OR TEA ROSES.—This lovely family may be grown without a green-house, and planted out will give profuse summer bloom. After the severe frosts have killed the young growth take up the plants and "heel them in" in the frame, covering the roots well. Protect with leaves, and in the spring prune back to a few eyes and plant out for the summer.

The same treatment will ensure success with the Bourbon class and the more tender Perpetuals.

ANTIRRHINUMS.—Transplant in October, cover well and replant in May.

DIGITALIS or **FOXGLOVE** is often winter-killed; treat as antirrhinum.

PANSIES.—This favorite plant suffers much from a wet open winter, but may be successfully grown in a cold frame.

Sow the seed or root cuttings in August; transplant to the frame; uncover the plants about the first of April or earlier and they will soon be in bloom.

DAISIES.—Treat as Pansies.

CHELONE, PENSTEMON.—Treat as Antirrhinum.

HUMEA ELEGANS.—A most striking plant. A biennial requiring winter protection. The seeds should be sown in spring; transplant to small pots; winter in a frame, giving plenty of air when the weather is warm enough to prevent frost. Transplant to larger pots in spring, and so on till all the plants are old enough to bloom.

ZAUCHNERIA CALIFORNICA.—A pretty plant requiring to be kept rather dry in the winter frame. The fuchsia like flowers are very ornamental.

A cold frame is also useful for wintering autumn sown annuals, and may be put to many uses we have not enumerated.

A cellar and cold frame are both essential to the florist, and were we called to give up one, it would be difficult to tell which would be dispensed with.

Glen Ridge, Sept., 1865.

CULTURE OF THE ROSE.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

POT CULTURE.

MANY of the ever-blooming roses cannot, in our climate, be cultivated in the open air without extreme precaution to protect them from the cold. To grow them most successfully the aid of glass is necessary. Many of the hardy perpetual roses also may be grown with advantage in pots, by which means their bloom may be prolonged into the early winter months, or they may be forced into premature flowering long before their natural season of bloom. The first essential in the pot culture of roses is, the preparation of the soil. Those of delicate growth, like most of the China and Tea roses, require a lighter soil than the more robust varieties, like most of the hardy perpetuals. A mixture of loam, manure, leaf-mould and sand, in the proportion of two bushels of loam to one bushel of manure, one bushel of leaf-mould, and half a bushel of sand makes a good soil for the more delicate roses. For the more robust kinds, the proportion of loam and of manure should be greater. In all cases the materials should be mixed two or three months before they are wanted for use, and turned over several times to incorporate them thoroughly. They are frequently, however, mixed and used at once. The best loam is that composed of thoroughly rotted turf. A very skilful English rose grower, Mr. Rivers, recommends the compact turf shaved from the surface of an old pasture, and roasted and partially charred on a sheet of iron over a moderate fire. We have found no enriching material so good as the sweepings from the floor of a horse-shoer, in which manure is mixed with the shavings of hoofs. It is light and porous, and furnishes, in decomposing, a great quantity of ammonia. For the more delicate roses it is particularly suited, while the

stronger kinds will bear manures of a stronger and denser nature. The light black soil from the woods is an excellent substitute for leaf-mould; or, to speak more correctly, it is a natural leaf-mould in the most thorough state of decomposition. Young and thrifty roses which have been grown during summer may be potted for the house in September. They should be taken up with care, the large straggling roots cut back and all bruised ends removed with a sharp knife. The ends of the branches should also be cut back. They may then be potted in the compost just described, which should first be sifted through a very coarse seive. The pots must be well drained with broken crocks placed over the hole at the bottom. Care must be taken that the pot be not too large, as this is very injurious. A sharp stick may be used to compact the soil about the roots, and from half an inch to an inch in depth should be left empty at the top to assist in thorough watering, which is a point of the last importance.

When the roses are potted, they should be placed in a light cellar or shed, or under a shady wall. They must be well watered, and it is well to syringe them occasionally. In a week or two they will have become established, and may then be removed to a green-house without fire and with plenty of air, care, however, being taken to protect them from frost at night.

The roses so treated are intended for blooming from mid-winter to the end of spring, and we shall soon speak further of them under the head of forcing.

A great desideratum is the obtaining of roses in the early part of winter. This may be done by growing ever-blooming roses in pots in the open air during summer,

plunging the pot in the earth and placing a tile or brick beneath it to prevent the egress of roots and ingress of worms.—Towards the end of August, cut off all the flowers and buds, at the same time shortening the flower stalks to two or three eyes. Then give the roses a supply of manure-water to stimulate their growth. If they are in a thrifty condition, they will form new shoots and flower-buds before the frost sets in, and may then be removed to a cold green-house, where they will continue to flower for several months.

FORCING.

“Forcing” is the very inappropriate name of the process by which roses and other plants are induced to bloom under glass in advance of their natural season. We say that the name is inappropriate, because one of the chief essentials to the success of the process, consists in an abstinence from all that is violent or sudden, and in the gentle and graduated application of the stimulus of artificial heat.

Roses may be forced in the green-house, but not to advantage, because the conditions of success will be inconsistent with the requirements of many of the other plants. The process is best carried on in a small glass structure made for such purposes and called a forcing pit.

A pit ten or twelve feet long and eight or ten wide will commonly be large enough. It may be of the simplest and cheapest construction. In a dry situation there is advantage in sinking the lower part of it two or three feet below the surface of the ground. The roses may be placed on beds of earth or wooden platforms, so arranged as to bring the top of the plants near the glass, and a sunken path may pass down the middle. The pit may be heated by a stove enclosed with brick-work, and furnished with a flue of brick or tile passing along the front of the pit and entering the chimney at the further end. The lights must be moveable, or other means provided for ample ventilation, and, if these are such that the

air on entering will pass over the heated flues and thus become warmed in the passage, great advantage will result. A pit may be appended to a green-house, in which case it may be heated by hot water pipes furnished with means of cutting off or letting on the water.

The roses potted for forcing as directed in the last section should be kept in a dormant state till the middle of December. A portion of them may then be brought into the pit and the young shoots pruned back to two or three eyes. The heat at first must be very moderate, not much exceeding forty-five degrees in the daytime; and, throughout the process, the pit should be kept as cool as possible at night, great care, however, being taken that no frost is admitted. With this view the glass should be covered at sunset with thick mats.—Syringe the plants as the buds begin to swell, and lose no opportunity to give air on mild and bright days. Raise the heat gradually till it reaches sixty degrees, which is enough during the winter months, so far as fire-heat is concerned. The heat of the sun will sometimes raise it to seventy or eighty degrees. Syringe every morning, and, if the aphid appears, fumigate with tobacco, then syringe forcibly to wash off the dead insects. As the plants advance in growth they require plenty of water, and as the buds begin to swell manure-water may be applied once or twice. When the buds are ready to open the pots may be removed to the green-house or drawing-room, and another supply put in their place for a second crop of flowers. When the blooms are faded the flower-stalks may be cut back to two or three eyes, and the plants placed again in the forcing-pit for another crop. This, of course, is applicable to ever-blooming roses only.

The most common and simple way, however, of obtaining roses in winter is, to grow them on rafters in the green-house. Some of the Noisette, China and Tea roses thus treated, will furnish an abundant supply of excellent flowers. By pruning them at dif-

ferent periods during the summer and autumn, they will be induced to flower in succession; since, with all roses, the time of blooming is, to a great degree, dependent on the time of pruning.

Roses potted in the manner described for forcing, may also be brought into bloom in the sunny window of a chamber or drawing room. They will bloom much better if allowed to remain at rest in a cool cellar for a month or two after potting.

PROPAGATION OF THE ROSE.

There are five modes of propagating the rose; by layers, by cuttings, by budding, by grafting, and by suckers.

PROPAGATION BY LAYERS.

This is, perhaps, for the amateur, the most convenient and certain method. The best season for layering is the summer, from the end of June to the end of August, and, for some varieties, even later. The rose which is to be multiplied should be in a condition of vigorous growth. Loosen and pulverize the soil around it, and, if heavy and adhesive, add a liberal quantity of very old manure mixed with its bulk of sharp sand. The implements needed for the operation are a knife, a trowel and hooked wooden pegs. Choose a well ripened shoot of the same season's growth and strip off the leaves from its base a foot or more up the stalk; but, by all means suffer the leaves at the end to remain. Bend the shoot gently downward with the left hand and insert the edge of the knife in its upper or inner side six or eight inches from its base, and immediately below a bud. Cut half way through the stem, then turn the edge of the knife upward and cautiously slit the stem through the middle, to the length of an inch and a half, thus a tongue of wood with a bud at its end will be formed. With the thumb and finger of the left hand raise the upper part of the stem erect, at the same time by a slight twist

turning the tongue aside, steadying the stem meanwhile with the right hand.—Thus the tongue will be brought to a right angle or nearly so with the part of the stem from which it was cut. Hold it in this position with the left hand, while with the trowel you make a slit in the soil just beneath it. Into this insert the tongue and bent part of the stem to a depth not much exceeding two inches. Press the earth firmly round them and pin them down with one of the hooked pegs. Some operators cut the tongue on the lower or outer side of the stem; but this has a double disadvantage. In the first place, the stem is much more liable to break in being bent, and in the next place, the tongue is liable to reunite with the cut part and thus defeat the operation. When all is finished, the extremity of the shoot should stand out of the ground as nearly upright as possible; and should by no means be cut back, a mistaken practice in use with some gardeners.

In a favorable season most of the layers will be well rooted before the frost sets in. If the weather is very dry there will be many failures. Instead of roots a hard cellular substance will form in a ball around the tongue. In the dry summer of 1864, the rose-layers were thus "clubbed" with lumps often as large as a hen's egg, but cases like this are rare.

In November, it is better in our severe climate to take up the rooted layers and keep them during winter in a "cold frame," that is a frame constructed like that of a hot-bed without the heat. Here they should be set closely in light soil to the depth of at least six inches and covered with boards and matting, or they may be potted in small pots and placed in a frame or cellar.

Layers may be made in spring from wood of the last season's growth; but laying the young wood during summer, as described above, is much to be preferred.

THE BIG TREE OF MONMOUTH.

BY G. P. DISOSWAY.

HERE I am, ruralizing for a short time in this rich region of New Jersey, unsurpassed for its cultivation and fertility. No one knows what a beautiful world he lives in, unless at this summer moment, he leaves our great city, with its noise, atmosphere, confined streets, and narrow lanes, for the country which God made. Man built the former.

Well does an old author say, "Who can ever fully express the pleasures of a country life? with the various delights of fishing, hunting, and fowling, with guns, greyhounds, spaniels, and several sorts of nets. What refreshment it is to behold the green shades, the beauty and majesty of the tall and ancient groves; to be skilled in the planting and training of orchards, flowers and potherbs, to temper and allay these harmless employments, with some innocent and merry song, to ascend sometimes to the fresh and healthful hills; to descend into the bosom of the valleys, and the fragrant dewy meadows; to hear the music of the birds, the murmur of the bees, the falling of the springs, and the pleasant discourses of the old ploughman, these are the blessings which only a countryman is ordained to, and are in vain wished for by the denizens of smoking cities; they are, indeed, the sights and sounds that give delight, but hurt not."

The whole face of the country now wears a most lovely appearance, the corn, here most abundant, exhibiting its ripening ears, the meadows are mowed and cleared off, and, in many fields, the clover still stands in all its luxuriance of red flowers. During this month the "green-robed senators of the mighty woods," as the old trees have been fitly called, are clothed in all the beauty of their summer array, and those who wish to know what the gloom and silence of a full-leaved forest is, should penetrate its shades now, when the whole scene

is shadowed with the deepest summer verdure. There they will see the graceful forms in which the dark masses of foliage hang, with the beautiful effects of light and shade among the branches. The pale gold of the woodbine, the trailing blossoms of the bramble, mingling with the drooping crimson of the foxglove, throw their fine masses of color over the green underwood; and at times you will hear the lowing of the cattle amid the deep shades, or the jingling of the sheep-bells, farther-off sounds that come like cheerful voices amid the solitude and silence of the forest. In such a spot no sensible, thinking man or woman need pine for any other companionship, for a sympathy with all that is gentle or beautiful in NATURE betokens a contented mind.

The forests, from time immemorial, have been the theme of praise and song, and to this day the "sylvan solitude" possesses the magic spell of romance. And what can be compared to the forest—Nature's own sanctuary? The noble columns rising boldly upwards unite together their airy arches, and the passing wind, like a distant hymn, murmurs in the silence. From the moss and flowers is shed a balmy freshness, while dew-drops, leaves, and sunbeams quiver through the branches, conducting the mind into the realm of wonders. Such is the summer forest—the silent retreat of solitary thought.

But here, each single tree is also a shape full of life and meaning. The rose bush beside the cottage, the willow near the fountain, or hanging mournfully over the hillock above the silent grave, do not these give such spots their peculiar charm and consecrate their history? Thus delineated the trees have a marked character, no longer the body which a botanist merely dissects, or a mere study in natural history, but a contemplation, leading and engaging the mind and the affections.

As the most perfectly developed animals have some decidedly marked type—a real *personality* of their own—just so, to a certain extent, may it be remarked of the greatest number of trees. Each one may be characterized by some peculiarity—it has life. Very different is the aspect of the oak on the mountain from the oak in the valley; or the birch beside the dashing torrent and the calm lake. A clump of trees, or a tree standing alone, or associated with others, all present a scale of the most varied moods.

I have indulged in these associations and reflections from a visit to the remains of the old tree of Monmouth, New Jersey. It stood upon the fine farm of the Rev. G. C. Schanck (Marlboro'). The dominie I found to be a good naturalist, with a cabinet, and fond of this delightful study, as every good man should be. From him I learned the particulars of this forest monarch, and hence they are authentic. It grew near his residence, and this *tulip tree* was surpassed in size by only one tree this side of the Rocky Mountains, and that was the *Elm* recently growing by the bank of the Genesee River, upon the late General Wadsworth's lands. It was said to have measured thirteen feet in diameter. The Monmouth tree stood upon the most elevated part of an open field unsheltered since the original forests were cleared away, probably more than 150 years ago. For a very long time it remained alone in its majestic strength and glory. The older inhabitants assert that formerly a similar one grew near it, but, struck by lightning, died.

A few years ago, this gigantic tree exhibited a vigorous growth with its large tulip-shaped flowers and green foliage. The trunk, the limbs, and top were all of proportionate size, so as greatly to deceive the eye in regard to its real magnitude, until a near approach discovered its immense dimensions. It was cut down in April last, the trunk perfectly round and straight, and near the ground, much enlarged; its roots occupied a space of 52 feet in circumference, or a diameter of 17 feet 4 inches. Above,

it slightly and gradually tapered to the limbs, measuring 28 feet from the lowest. At one foot above the earth its circumference was 34 feet 5 inches; three feet, 27 feet 4 inches; at six, 22 feet 19 inches; at eighteen, it was 20 feet around, averaging 32 feet in height, the tree divided into five branches, the larger measuring respectively 10, 12, 13, and 15 feet 9 inches in circumference. One of them extended 60 feet from the trunk and with the opposite branch made the distance of 106 feet. In another direction, the top measured 86 feet across. Its whole height reached about 110 feet.

The bark around the lower part of the trunk, or as far up as visitors could well reach, has been abraded, and marked with their initials or names, as they wished thus to hand them down to posterity. Above, the bark remained in its natural state rising in furrowed or convexated ridges, some four inches deep, and covered with thin, flat lichens, presented the appearance of having braved and stood the rains and storms of past centuries. Since cut down, the age of this great tree is ascertained to have been about 225 years. The central part of the trunk for about three feet in diameter was found to be decayed, but the rest perfectly sound. Its stump measured eleven feet through, and it required the work of one man for seven days to cut down this remarkable king of the forest, and the chips filled five wagon loads. An entire section of a foot in thickness, sawed from the bottom of the tree, was conveyed on a two-horse team to the college of New Brunswick, for its cabinet; but, like the Vicar of Wakefield's picture, when it reached the destination, the door was not high enough to admit the new comer. Wonderful tree! What reverend histories hover about it! for it has outlived generations of the red and the white man. Here it grew, when Hudson, in the year 1609, first anchored the *Half Moon* within Sandy Hook, not many miles distant, and here it flourished quite near by, during the bloody and patriotic

contest at Monmouth more than three-quarters of a century since. These gigantic fallen limbs and trunk now lying prostrate before me, seemed clothed in impressive thought. Even now some artist should portray its grand ruins before they are gone. This last monarch of the mountain and plain has been a giant hero, equipped and rejoicing to fight the battle of the clouds with the wild winds of heaven. But below, the ivy and honey suckle have climbed

up and twined around its stem, whilst the blackbird and robin caroled fresh songs among its lofty branches. Long did it stand proud and green, and there was none like it, by which the reflective fancy could count so far back, the boundary marks of our history, but the ax, which in this day is wielded against all that is planted by nature, has not been withheld, and the old tulip of Monmouth has also fallen to rise no more!

Monmouth, N. J., Aug., 1865.

THE NEW ERA IN GRAPE CULTURE.—No. 3.

BY GEORGE HUSMANN, HERMANN, MO.

SUMMER PRUNING AND TRAINING.

THIS is one of the nicest operations in the vineyard, and one to which the old adage can be safely applied: "A stitch in time saves nine." Let us see; here extreme neatness and thorough work can be combined, with a great saving of labor.

This, your readers may think, is hard to do. Let me try to convince them of the contrary. Let us suppose the vine properly pruned in the fall, as it ought to be, and nicely distributed and tied to the trellis, as it should be early in spring. Let us further imagine the young fruit bearing shoots along the cane to have grown, say six inches; they will then show the young bunches or buttons, as some call them, from two to three on each branch; we will suppose the time to be two weeks before blossoming.

Now, reader, if you wish to reduce this to practice, follow me to the vineyard, to this five years old Concord vine; it has three principal arms distributed over, say eight feet of trellis, with numerous spurs on each. On each arm select one of the lustiest growing shoots, about two to three feet from the ground, which tie neatly to the trellis, and allow it to grow unchecked.

Take away all the shoots which show no fruit, rubbing them off clean, for we want

no wasting of energy in surplus wood. All shoots which show fruit pinch off just above the last bunch of grapes, which you can easily do at this early time, with finger and thumb. In this way go over your whole vineyard, and my word for it, you will see the young bunches develop as fast again, than if you waited until after the bloom, as the old fogies do. Besides, bear in mind, the leaves are the lungs of the plants.

Pinching the shoots at so early a date, does not rob the plant of so many fully developed leaves as the old method; it enables you to look over your vine much easier, as the leaves do not obstruct the view; they are not tangled and interwoven with tendrils, and such pinching is only a gentle checking of the sap, leading it into the young bunch and the remaining leaves. If all the shoots are not developed enough, leave the small ones until you have gone over your ground, and in a few days go over them again, pinching the remaining ones. Do not allow more than one shoot out of each bud, as three large, well developed bunches are better than five small ones. Take off all the side shoots. After a week or so the laterals will have pushed on your fruit bearing branches. Go over them again, pinching all of them back to one leaf.

This will leave a young leaf opposite to each bunch of grapes, which will now develop rapidly, and serve as a conductor of sap to the young bunch. Leave the laterals on the cane you have selected for next years bearing, to grow unchecked, and as soon as the young cane reaches the top of your five foot trellis, pinch it off there, to force the laterals into stronger growth, for we want them for spurs to grow our fruit on next year. Keep them tied away from the fruit bearing arms, so as to allow *them* all the ventilation and circulation of air they can get, for this is all important, to raise fine fruit. It should grow and ripen *in the shade*, but *well ventilated*, and the young leaves on its own laterals will shade it sufficiently.

In about a week more the laterals on the fruit bearing branches will have pushed a second time. Go through again, pinching back the young growth to one leaf, and your summer pruning is *done*, at a time when your old foggy vine dresser will just *commence*; will pull out his knife and cut back the already hardening wood to two leaves beyond the last bunch of grapes, when the branches are all interlaced with thin tendrils, and he will have to tear and slash the poor vine half to death, divesting

it of over one half its leaves, and spending more time than you did in all your pinching. If, after this maltreatment, laterals should have the audacity to show themselves, he will tear them out by the root, often also taking the main leaf with it. And what is the consequence? His vines, after such treatment, will sicken, the leaves he has left will drop off prematurely, and the fruit ripen irregularly with a skin like leather, while yours, if treated as before indicated, will have plenty of air, plenty of young, vigorous foliage to shade the fruit, and will ripen with such a bloom on them, and so thin a skin, you would not think they were the same variety. Try both methods and report progress. I think you will follow my plan entirely the following summer.

This has been one of the most trying seasons for the grape we have ever had, and only the most hardy and healthy varieties have been able to pass through the ordeal. The vintage is now commencing, and in a month or two I will report in full on some seventy varieties I have in bearing. Suffice it to say, that Norton's Virginia, Concord and Hartford Prolific have a heavy crop, and the Catawba is almost a failure.

NAOMI RASPBERRY,

BY F. R. ELLIOT, CLEVELAND, OHIO.

HEREWITH I send you a drawing of Naomi Raspberry, a variety that originated some years since in this county, but has never been disseminated; but I learn from Charles Carpenter, Esq., of Kelly's Island, who, with the Messrs. McIntosh & Sons, of Cleveland, have most of the plants, that it will be for sale the coming fall or spring. The Naomi is probably a seedling from the Franconia, is quite hardy, requiring no protection in winter.

Canes, strong with numerous aternal branches when fruiting. *Wood*, brown,

smooth, with occasional inconspicuous spines. *Leaves*, generally broad; lanceolate on the fruit branches about three by two and one half inches—very productive. *Fruit*, very large; roundish, slightly conical, or obtuse conical, hairs long. *Color*, bright rich red. *Flesh* firm and sprightly; a little acid until fully ripe, when it is rich and delicious: bears carriage well, even if left until fully ripe.

My drawing is from an average cluster, and designed to show the fruit in all stages of its growth.

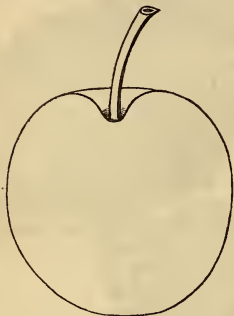


NAOMI RASPBERRY.

FOOTE'S EARLY ORLEANS PLUM.

BY CHARLES DOWNING, NEWBURGH, N. Y.

THROUGH the kindness of the Hon. Ashael Foote of Williamston, Mass., I have received specimens of a new seedling plum raised by himself, from seed of Wilmot's Early Orleans, and although not so rich and luscious as some of the later varieties, it is of very good quality, and taking into consideration its other good qualities, earliness, hardiness, productiveness and freedom from



rot, it will no doubt prove a valuable acquisition to fruit growers, especially for early marketing. Description—size medium, as above, roundish, inclining to oval—without suture; a mere dot at apex; slightly flattened at base and apex; skin

very black, covered with a blue bloom; stalk of medium length inserted in a large deep cavity; flesh greenish; moderately juicy, with a sweet rich pleasant flavor; quality "very good;" adheres to the pit which is oval and thin. Young wood, slightly downy, greyish. Tree, hardy, vigorous, spreading, very productive.

I give you Mr. Foote's letter dated July 31st:—

"The tree (which is from a pit of Wilmot's Early Orleans, was planted in the fall of 1851,) is now making its thirteenth annual growth, and by actual measurement is twenty feet high, with a spread of fifteen feet, and as a tree is a perfect model of symmetry and healthful luxuriance. It is also perfectly hardy, having never in this severe climate lost an inch of wood by frost, notwithstanding its vigorous growth.

It is now laden with its third successive crop of fruit, which has been on my table in perfection for at least a full week. Its product in 1864 was upwards of three bushels, all fair and perfect, whilst Imperial Yellow and Green Gages in the same garden were badly affected with rot. I suppose that at Newburgh this fruit would have been fully ripe by the 15th of July."

ASHAEL FOOTE.

 NOTES ON THE AUGUST NUMBER.

PRUNING THE PEAR TREE.—It is always easier to criticise than create—but in grafting in a branch to supply any vacancy on dwarf Pear Trees, I have found side grafting in early spring to prove successful. I practice going over my trees early in April, and when a branch is wanted to fill up, I cut my graft from the tree and proceed to insert it where wanted by making a downward cut on the body of the tree, through the bark, and into the alburnum wood, then

form the graft, wedge-shaped at the lower end, with two buds to grow, and insert it into the cut in body of tree; tie with bass matting and cover with a little wet stiff clay. After the graft has grown two or three inches, the bass string should be cut apart. Laying in a branch as directed by Du Breuil, is attended with nearly double the labor, and I have not found it any more successful. Every pear tree grower should learn to prune his own trees—it is almost,

if not quite, impossible to hire labor attended with a knowledge of vegetable physiology, and without that he who attempts pruning pear trees will, in nine cases out of ten, do more injury than good.

A PIG AND A COW.—Good advice where one has a fancy for pigs, but I confess I have no such fancy, and so far as a pecuniary gain my experience has been against rather than for the pig. For some years I kept pigs, feeding on weeds, sour milk, slops, etc., until the time of sweet apples, then fattening on apples, and ripening off with corn, but I found the money paid for my pigs, and the value of my apples and corn, at twenty-five cents a bushel, amounted to more than my pork would sell for when taken to market. I now practice a compost heap of my weeds moistened with slops, using occasionally a sprinkling of salt, and plaster paris (gypsum). I prefer it to the pig practice.

The cow is indispensable to comfort in the country, and all here said is but a tithe of what might be advanced in her favor. Aside from daily usefulness there is additional beauty added to every scene by some addition of active life in the landscape.

WATER PLANTS.—Educate—educate, and so elevate and cultivate the mind that all of nature's creation may be understood and appreciated. Few of our water plants as yet are known to even those who claim to be amateurs, and still less to the masses of the people, *Nymphaea odorata*, *Nelumbium luteum*, and *Nuphar advena* are about all that are ever noticed or even known by name. Go on Mr. Rand and help to educate us both in the knowledge of the plants as well as the *simple* and *easy* way of growing them, for, believe me, nothing will be grown to any extent for its beauty alone, without it can be done at little trouble and expense.

WINE MAKING IN NEW MEXICO.—All and every information relative to grape growing and wine making is especially valuable to our people at this time, and we

are much indebted to Mr. Knapp for this account.

FERNS, No. 2.—I have heretofore said my say on this subject.

NOTES BY T. T. S.—Practical experience thus related is always valuable. It is plain that the more and longer we cultivate, the higher and more artificial our systems, the more of insect life have we to contend with. In this relation of the Plum Trees is it the alkalis in the ashes that give extra vigor and health to the trees or—what? Some of our friends where this black knot has prevailed so long and so extensively, should give us an answer.

GRAPE CUTTINGS FROM HISTORY.—Will Mr. Reid oblige by telling us how old his Catawba vines are, what the soil in which they grow, and whether the mildew affected the leaf or fruits, or both, and if so, at what period?

PLEASURE GROUNDS.—A good article, and the "sound advice" given is in one sense correct, but if the "genius" of one's immediate locality is without travel and study, better, before planting or cutting away of tree or shrub, send a distance and obtain the services of a man who has made the beautifying of nature his study and practice. I have in mind as I write a Landscape Gardener, so called, whose designs, one and all, embraced the same general features. It mattered not to him what the extent of the grounds, or the style of the house, he had a mass of trees and shrubs for the sides of the lot and a lawn in the centre. Again, as illustrative:—A gentleman employed an artist to mix colors to paint a cottage house, giving the body of the house and trimming, of course, different shades. This was, of course, as required, and so pleasing to all that in less than six months nearly every house, no matter what its architectural character, in the village was painted as near the copy as country painters were capable of mixing colors.

THE NEW ERA IN GRAPE CULTURE.—Mr. Husmann here gives us a statement, show

ing that grape growing, provided we have the right soil, can be as successfully done by the poor man as by the rich. But there is one point I must take exception to in Mr. Husmann's article, and that is the putting into account the product, or moneys received from sale of plants, as part of the vineyard. That should be counted aside, for while we know that Catawba, Concord and other roots have, the past year, brought good prices, such cannot long continue, even new varieties that last year sold at \$60 to \$80 per hundred plants, are offered at from \$10 to \$15. Let us have the vineyard by itself and the nursery by itself, and then we will show that grape growing, on suitable soil, and in selected locations is one of the best and most profitable of occupations.

MORE NEGLECTED FLOWERS.—This is right, give us more taste to cultivate the naturally beautiful plants of our own coun-

try, by showing our attention to them from time to time, so may we learn to appreciate home products as well as foreign importations.

ACTION OF METALLIC SALTS, &c.—An interesting record, and as a matter of science we should like to see it continued, but would suggest that experiments should be made with plants, whose growing seasons were nearer akin than the present ones of Strawberry and Cauliflower—as that may have something to do with the matter. Again, we would like the experimenter to grow at same time separate plants, in pots, in same position of exposure, watering only with rain-water. I may be skeptical, but I do not consider, in matters of horticulture or agriculture, that any one experiment with one exposure is of much value.

REUBEN.

HYBRIDS AND CROSS-FERTILIZATION.

BY J. M. MERRICK, JR., WALPOLE, MASS.

IN an article upon Open Air Grape Culture, published in the *North American Review* for April, 1865, I made the following remarks about Rogers' Hybrid grapes, which I repeat here, because the genuineness of these so-called hybrids has been called in question, both before and after my paper was published:

"Mr. Rogers has given to the world no less than forty new grapes of different degrees of excellence; hybrids between several foreign kinds and a monstrous and uneatable variety of the *Vitis Labrusca* from the Salem woods. Some of the new comers have already taken their place in the small list of standard out-door varieties, and three or four of them, for healthy growth and excellence of flavor are almost unsurpassed. Some writers, indeed, maintain that they are *not* genuine hybrids, but simply seedlings of the native grape; but this notion is wholly untenable, and a

glance at the following considerations will show in part the weight of the evidence that goes to prove them to be true hybrids:

If forty seeds of the wild grape be planted and as many seedlings obtained, one half of these seedlings will probably be barren; and of the other half nine-tenths will show no marked superiority to their parent. If forty fertile plants should be raised, all better than the parent vine, it would be little short of a miracle. Mr. Rogers has raised forty-four vines without getting one staminate plant, and the poorest among them is better than the average of fertile seedlings from the wild grape,—a result to be explained only by admitting a large infusion of the *Vitis Vinifera* in their composition.

Hybrids from two species which are very difficult to cross are usually very sterile, but these are not only genuine hybrids, they are also very fertile; and we have ob-

served in some experiments we are making, further to unfold their character, that the seeds from these hybrids, and especially from the number 19, germinate readily, and with much more certainty than the seed from the wild grape."

Mr. E. W. Bull, of Concord, in the last volume of the Massachusetts Agricultural Reports; Mr. Fuller, in his Grape Culturist, and various other well qualified people, have pronounced these grapes simple seedlings from the native.

Whether Mr. Rogers' vines are hybrids or not, makes very little difference to purchasers, provided the grapes are good growers, healthy and desirable; but, as a scientific question it is of the utmost possible interest. I cannot admit that they are not hybrids until some one will point out the flaw in my argument above quoted.

In support of the theory that they are hybrids, we have,

1st—Mr. Rogers' own statement of his experiments in the *HORTICULTURIST* for 1858, in which the details of the hybridizing process are given, and which show that the experimenter took all reasonable measures and precautions to have the pollen of the foreign kinds fertilize the native variety.

2d—The general character of the vines themselves, their peculiar foliage and manner of growth, and especially the striking and distinct shape of the buds of some numbers, and the appearance of the wood between the joints, which to many observers, ignorant of the names or pretensions of the vines, at once suggest a foreign grape.

3d—The character of the fruit.

It seems to me it does not require a very nice taste to find a flavor in these grapes distinct from the native, and they are certainly beyond all comparison, better than the average, or it might be said, better than the best seedling fruit from the wild vine in the first generation. I may add, that I have this day, September 3d, picked berries of the number 15, tolerably ripe and sweet, from a trellis where the Concord were not quite ripe, and the Dela-

wares only a trifle more mature than the Concord.

4th—The great difference presented by the leaves of seedling vines which I have raised from number 19, considered by some the best of the series, goes a great way, in my opinion, towards showing that the parent of these seedlings was of a mixed origin.

Some of the leaves have all the marks of the pure native, (*Labrusca*) while others are of a delicate light green, pale underneath, without down, sharply serrated, and very foreign in aspect.

I know that no very sound theory can be built upon the looks of leaves alone without fruit, but I simply say that the leaves of my seedlings present greater difference of character than we should expect, in direct seedlings from a native vine.

The whole subject of hybridization and cross-fertilizing presents so many curious and apparently anomalous facts, that I permit myself to dwell a moment or two upon some of the most remarkable.

In the article in the *North American*, above alluded to, I remarked, "It is a curious, but admitted fact, that there are certain plants, as for instance some species of *Lobelia*, which can be far more easily fertilized by the pollen of another and distinct species than by their own pollen. Any one, says Darwin, can convince himself of the efficiency of insect agency, by examining the flowers of sterile *Rhododendrons* which produce no pollen, for he will find on their stigmas plenty of pollen from other plants." At the time the foregoing paragraphs were written, I had not read Darwin's later work, *On the Fertilization of Orchids*, a book containing detailed accounts of most patient and elaborate research, undertaken to throw some light upon a little understood class of plants, and which seem to prove, in the case of *Orchids*, that the various contrivances by which the ovulus are impregnated, have for their main object the fertilization of each flower by the pollen of another flower. It is impossible to give the details of the researches,

but the learned author thinks he has proved that there are at least twenty-four genera of Orchids, which could never be fertilized were it not for insect agency.

Now if Orchids and Rhododendrons can be shown to need the help of insects for perfect and successful impregnation, this may also be the case in a less degree with the genus *Vitis*, and then the great divergence of different seedlings from the same parent would not be so surprising. If any one objects to this view, the fact that the flowers of a fertile vine seem most admirably adapted for self-fertilization, he should recollect that no flower in the world *seems* so well calculated to fertilize itself as that of an Orchid, and yet it is certain that Orchids need extraneous help.

A curious and anomalous case of transformation of sex, or of mistake with regard to the sex of a vine, has lately come within my observation, and is so exactly the counterpart of a case mentioned by Darwin, that I cannot do better than present both to my readers.

Mr. E. W. Bull showed me, a while ago, a barren seedling grape vine raised by himself, and permitted to remain among the bearing plants, in accordance with a notion borrowed from Chaptal, viz: that it is advantageous to allow a few staminate vines to remain in a vineyard of seedlings, as they help to fertilize the others. For several years this particular vine blossomed in the spring, the "false blossoms" dropped off, and it remained the rest of the season a useless incumbrance. At last, one year a bunch of blossoms on this staminate vine set and perfected four grapes! A single well authenticated case like this gives our notions about diœcious plants a very rude shock. Most persons to whom I have mentioned this curious fact, content themselves with denying it, but to do this is to impeach the accuracy of an experimenter no less skillful and no less quick-sighted than Van Mons himself. Now for the other side of the matter. Dr. Darwin, in his researches, came across one genus of Orchids

which wholly baffled all his attempts to fertilize it. It remained, as he says, the opprobrium of his work. He tried in various ways to effect impregnation without success, and was about to give up the matter as wholly inexplicable, when it occurred to him that although no instance of the separation of the two sexes was known in Orchids, yet that *Acropera* might be a male plant. A critical examination of the stigmatic surface, of the utriculi from the stigma, and of transverse slices of the ovary, as compared with ovaria of other Orchids, all led to the inevitable conclusion that the *Acropera luteola* is a male plant. What, however, is very curious is, that no corresponding female form of this Orchid is yet known.

Here then are two cases, each the counterpart of the other; one in which a staminate plant bears fruit, another where a plant, concerning whose sex no doubt had been entertained, proves to be exactly the reverse of what it was long supposed to be. These facts should teach us to be cautious in pronouncing definitely concerning a doubtful form.

Having laid down my belief (in the May number of this journal) that the perfect grape, when we should get it, would prove to be an artificial hybrid, it gives me particular pleasure to quote, in concluding this article, the closing paragraphs of Darwin's book.

"It is an astonishing fact that self-fertilization (in Orchids) should not have been an habitual occurrence. It apparently demonstrates to us that there must be something injurious in the process.

Nature thus tells us in the most emphatic manner, that she abhors perpetual self-fertilization.

May we not infer as probable, in accordance with the belief of the vast majority of the breeders of our domestic productions, that marriage between near relations is likewise in some way injurious—that some unknown great good is derived from the union of individuals which have been kept distinct for many generations?"

DISAPPOINTED HOPES.

BY "GLADIOLUS."

MESSRS. EDITORS: On a beautiful Sunday morning in this first of the autumnal months, I was invited by a friend to take a drive out into the country, and visit the estate of a gentleman of wealth and taste living in the town of Orange, Essex County, New Jersey. *Albeit* it is not my wont to devote the Sabbath to pleasure excursions, or to secular occupation, yet believing that a man may worship his God in the temple of nature, "not made by hands," and falling back upon the precept of our blessed Lord, that "the Sabbath was made for man, and not man for the Sabbath," I yielded to the temptation, and as the church bells were calling the people of God to the service of the sanctuary, I took my seat with two other friends (guests fresh from the land of Dixey), in the comfortable carriage of my friend, and drove out to the place of which I am now going to tell you. A short half hour carried us from the sound of church bells, and the heated abodes of city life to the rural retreat we visited; we entered by an unpretending approach, and upon alighting from the carriage were met by a son of the proprietor who, with the graceful manners of a true and cultivated country gentleman, escorted us to the mansion and welcomed us to the hospitalities of the house. Finding that we were on a newly made place of some eight years work, we were curious to inspect what art and labor, combined with taste and liberal expenditure, had achieved in the way of landscape gardening on an almost level piece of ground. The grounds, though of only some twenty-five acres, had been so treated as to give the idea and appearance of very much greater expanse. Open lawns over gently undulating surfaces, and without a visible fence extended from the rear of the mansion over a long stretch, and were bounded by a piece of natural woodland in the distance, which furnished a very beautiful background, and which when nature puts

on her gorgeous fall livery must be amazing fine. These lawns were divided by belts of ornamental planting which, without confusing the scene, gave great variety and heightened the general effect. There were magnificent high hedges of *Arbor Vitæ* admirably clipped and kept, which screened off the garden and whatever it was intended to shut out of sight, or prevent being all taken in at a glance. Passing around one of these hedges we entered the fruit garden, and our eyes were regaled with a sight of luscious fruits of all kinds and in profuse abundance. Melons of rare shape and size, masses of pears of many varieties, among which the Seckle, queen of all, was seen in highest glory; native grapes in abundance, and representing the best of the new varieties. All indicated a liberal and well-informed proprietor. These were shown by our host with evident pride and conscious excellence; but he led us at last, and with a premonition of sad words to a vinery where his pride seemed to meet with a sudden and terrible reverse. "I take you in here" he said, "to show you a wreck!" and a wreck it surely was in every sense of the word. Picture to yourself, a fine structure got up in the best style, curvilinear roof, of some six years standing, and filled with noble old vines with stalks as thick as your arm, each well loaded with bunches, some of four or five pounds weight, just ripening, and the whole suddenly converted into a reeking mass of rottenness. Mildew—mildew—mildew—covering every leaf and every bunch; the ground underneath strewn with the filthy debris, and the whole house reeking with a nauseating, stifling atmosphere. "Well," we exclaimed, "this is cruel, perfectly cruel! enough to make a saint swear; 'tis the fault of your gardener, what has he been about—does he know anything of his business and duties, and if yea, why this abominable neglect?" Our own feeling was (being

somewhat of the pugnacious order) that if the vinery was our property we would just like to deliberately, and in cold blood, place in position a small piece of field artillery and open fire on the house, and blaze away until we had reduced the whole concern into the smallest possible fragments—and we so expressed ourself. We anathematized the gardener and heaped invectives on his devoted head. Then we began to investigate the facts of the case, and here is the first of all the present rigmarole.

We present the case for your consideration with some of our own philosophy. It appeared that the house in question was a hot-house, furnished with pipes and the usual hot-water arrangement. It never had been known to fail in its annual crop of fruit: always considered as a success; but during the last winter, the plants had been laid down to rest, raised in the spring and the house treated only as a cold vinery. Everything went on well; a fine show of fruit, probably near a thousand pounds of grapes; and just as they were ripening this calamity overtook the house and overwhelmed everything in one big destruction. On hearing this statement we reconsidered our denunciation of the gardener, and began to reason on the subject, and look for causes beyond a gardener's neglect. The theory we elaborated was this:

1st. The house had always previously been a hot-house; the plants reared and cultivated year after year, on the forcing principle, under fire-heat: resulting from this a fixed habit in the plants as to their growth and fruiting.

2nd. This condition is suddenly interfered with: the fixed habit changed. The spring was cold and wet. The outside border being subjected to the cold rains and melting snows, and the plants inside missing the fire-heat had its effect upon the roots. The growing plants inside thus missing the fire-heat were rendered highly sensitive by the change to any morbid influence, and especially to the condition of the outside border. The shock was too violent, and consequently

3d. The plants were just in the condition favorable to the development of mildew which, when once began spread like wildfire, and the whole concern went up at once like the Southern Confederacy—one grand collapse.

Well, what do you think of our theory? We would add, *en passant*, that a second house to which a conservatory was attached shared the same fate, though not quite so bad. The little fruit that could be found to taste proved poor and insipid. We considered the case an interesting one, and thought that perhaps other gentlemen had met with just such wholesale disappointment. That a presentation of the case to you and your readers might call forth some valuable information, and with this intent we have indicted this letter descriptive of our Sunday drive. Hoping that our host whom we have left nameless may not look upon our report as impertinent or a breach of hospitality, and that it may be the means of calling forth some valuable contribution to the science of Horticulture from a source better informed than the writer.

STRAWBERRIES AGAIN.

THE increasing interest manifested throughout the country in this most interesting branch of horticulture, has induced me to avail myself, if agreeable to you, of the use of your columns, to reply to the numerous queries propounded to me about my manner of cultivating this most delicious fruit. First—

SOIL.

The soil is a clay loam, clay rather predominating, sufficiently stiff to *bake*, when not well manured and cultivated. Second—

TIME OF PLANTING.

My bed was planted in the spring, but I usually plant more in August and September than any other season. My custom is

to plant at either season when I get ready. If planted in August or September a fair crop may be expected the following season. Third—

DISTANCE APART.

I invariably plant in *rows* and *never* in *beds*. I hold that the objections to planting in *beds* are so great and so palpable, that it will admit of no discussion whatever. My standard rule is to plant in rows three feet apart, and plants two feet in the row. I have found this close enough for every convenience of picking, cultivation, manuring, &c. Fourth—

RUNNERS.

"What do you do with the runners?" is almost a universal enquiry. We treat them as *weeds*, unless wanted for the increase of stock. Cut them off as fast as they appear, by any convenient process your own judgment may dictate; a light, sharp steel spade, or a scuffling-hoe, I have found the most practicable and expeditious. Fifth—

MANURES.

I use no other but barnyard manure, *composted* nearly one year, with an occasional topdressing of dry wood ashes. The soil is limed before the bed is planted at all. The object of composting is to destroy the seeds of grass and weeds, the bane of strawberry culture. The value of composted manures, in my estimation, is simply beyond computation. Let any one try it once.

In first preparing the ground I aim to use an *abundance* of manure. My theory is that

plants that are expected to produce *fruit* must have something to *feed* upon. Sixth—

MULCHING.

I mulch in the Fall with clean straw, and leave it on through the Spring for the fruit to lie upon while ripening, to avoid the necessity of washing the fruit, only opening the mulch immediately about the crown of the plant. Seventh—

DURATION.

I prefer to have some new plantings coming in every season; but, by good management, I think, a bed may be continued in one place about three years. Eighth—

PRODUCT.

The total product of our bed, this season, was a fraction short of *five bushels* on the 37.50 part of an acre, making at the rate of 185 bushels to the acre. Ninth—

FLAVOR.

The "Albany Seedling" combines more good qualities in itself than any other one variety we know of. It has been pronounced by some as too acid. We have not found it so when properly ripened. Even that acid is pleasant and very healthy. Tenth—

GENERAL MANAGEMENT.

In conclusion, we would urge *clean* cultivation, principally by hoeing, and only plough or spade but once a year—viz., just *after* the crop of fruit is gathered.

WM. DAY,

Morristown, N. J.

—*New York Observer.*

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

BACK VOLUMES OF THE HORTICULTURIST. —We would be greatly obliged to our subscribers, having back volumes that they are willing to dispose of, to send us a list and the cash price. We are prepared to purchase single volumes, or whole or partial

sets. For the years 1854 and 1855, we have a small number of volumes. For 1856, we have 10 copies for sale, price \$2, bound and post paid. All other volumes, from 1846 to 1863, inclusive, we would like to buy.

It is not often in the history of any publication, that its proprietors are in the market buying up its back volumes for cash; volumes that have been read and consulted for years, thumbed, shelf worn and musty they may be; but such this time is the case. As years roll on, as the love of Horticulture and Rural Arts increase, so steadily and surely increases the demand for Horticultural Literature, both of the past and present.

The croakers and grumblers of past years are especially invited to send in their back volumes. Those who could never see any good thing in the "Horticulturist," and were always prepared with a hundred or more suggestions, how it could be made better, &c., will be sorry to know that each and every volume has been, and is to-day, a full representative of its cost, and that each subscriber has received his moneys worth to read it, to keep it, or to sell it.

AGRICULTURAL BOOKS.—We call the attention of our readers to our list of Agricultural, Horticultural and Architectural works, embracing all the late publications, with revised prices for the fall trade. We send these works by mail, post paid to all sections of the country, having postal communication. We put them up securely in strong wrappers, so as to carry safely. Our most distant readers can therefore get them in as good order and for the same price as if a personal call were made. In addition to the list published, we execute orders for the purchase of all classes of publications, and for Agricultural, Horticultural and Architectural supplies.

DIXON'S LOW DOWN PHILADELPHIA GRATES for burning wood and hard and soft coal. The best and cleanest open fire place known. No house should be without one open fire. We can supply all sizes of these grates at manufacturer's prices. Samples can be seen at this office, send for a circular. Prices range from thirty-five to sixty dollars, according to size and finish.

AGRICULTURAL AND HORTICULTURAL PERIODICALS.—Any of our readers who wish to add to their list, any of the publications on Agriculture and Horticulture, can do so through us. Specimen copies can always be seen at this office, or mailed on receipt of price.

WOODWARD'S COUNTRY HOMES.—This is a book of 166 rather small, but beautifully printed pages. It tells us how to build houses cheaply, elegantly, and so as to tend to make us healthy, happy, and to live a long time! Such a book has long been needed, and is well worth having. It is not all talk and guesswork, but its statements are confirmed by ample illustrations, showing the reader how his home will look inside and out, when he gets it constructed. With such a book as this at his command—and many others as helps—a man is a fool—he is very foolish, at least—to go on and build from his very imperfect knowledge of such business, and will be very likely to incur large and unnecessary expenses, and *not* have the house he desires when it is done. Most persons look at house building as they do at farming. Every body knows how to build a house, or manage a farm. "Why, it comes by nature, just as reading and writing did to Mr. Dogberry!" So they go on, and not one house in fifty, when it is completed, is what the owner intended to have.—*N. England Farmer.*

FINE GRAPE VINES.—Last Spring we received from J. F. Deliot, Esq., of Sing Sing, an assortment of fine grape vines, mostly of the new varieties. They were the finest one year old plants that we ever saw, and do credit to the propagator. A season's growth has shown the great superiority of good vines over the miserable attenuated specimens too frequently met with.

HORTICULTURAL ASSOCIATION OF THE AMERICAN INSTITUTE.—The lecture of Tuesday evening, May 10, was by PETER HENDERSON of Jersey City, on "The Mar-

ket Gardens of New-Jersey," in substance as follows:

The market gardens of New-Jersey are embraced in a half circle of ten miles from the City Hall, New-York. The land occupied by them is about 1,000 acres, and it is questionable whether there is an equal area anywhere else in the country so thoroughly cultivated, or with such profitable results. In many cases the returns are \$1,500 per acre, and it is perfectly safe to say that the whole average is \$1,000 per acre. But this high degree of fertility is only obtained by the highest cultivation, and it takes about three years to break in farm lands and bring them up to this high standard. The varieties of vegetables cultivated are few in number, and mostly different from those of Long Island, whose lands embrace a much greater extent, but are not so highly cultivated. The vegetables grown are principally cauliflowers, cabbages, beets, spinach, onions and lettuce for a first crop, followed by celery, horse-radish, thyme, sage and other herbs for a second crop, for to produce the above results the soil must be kept at work, and as soon as the Spring crops are off in July, the plow and harrow again invade mother earth, and she is planted with the Fall crop. The particular manner of cropping is something like this:

Cauliflowers, for instance, are planted out two feet between the rows and fifteen inches between the plants, setting lettuce between the rows, which is fit for market before the cauliflowers are large enough to be injured. The cauliflowers in turn are marketed the last of June or first week of July, when the ground is prepared and planted with celery in the following manner: After the soil has been well pulverized by plowing and harrowing, lines are struck out three feet apart, but no trenches are made as is usual in private gardens. The plants are set in these lines six inches apart, and the ground kept clean by the cultivator until September, when the plants are strong enough to allow the earth to be laid up against them by the plow, and the banking is completed with the spade. In

private gardens the plants are often set on a level surface one foot apart each way, the ground kept free from weeds until the celery so covers it as to smother or keep them down. In its struggle for light, the celery stalks shoot up in a convenient form for blanching. This process is best performed by lifting the plants and setting them out in a cool cellar in sand about the middle of November. They are packed pretty close and the sand sifted in nearly to the tops of the plants. Grown in this way a plot 20x20 feet will give 400 plants—an abundance for any family from November to May. The variety best suited for this market is known as the French or Incomparable Dwarf.

Another feature peculiar to the Jersey market gardeners is the forcing and forwarding of early vegetables by hot-beds and cold-frames, immense numbers of which are used, some growers having upward of 2,000 sashes, principally for the forwarding of lettuce and cucumbers in cold frames. This frame is very simple, being two boards 9 to 10 inches wide, fastened to end boards six feet long, on which 3x6 feet sash are placed to any desired extent. The lettuce plants are set in them in March, eight inches apart, or 50 plants per sash. By the middle of May the lettuce is fit for use. As soon as a few heads are cut, seeds of cucumbers are sown in their places. They come up quickly and take the place of the remaining lettuce as it is removed. By this method any occupant of a city lot could find a corner for a sash or two, and with little trouble, provide lettuce and cucumbers at a time when stale ones which have passed through half a dozen hands could not be purchased at less than \$1.50 per dozen.

Of the fruit market gardens in this section there is nothing to boast. There is not, to my knowledge, a single acre of strawberries, raspberries, blackberries or grapes properly cultivated in Hudson County. Growers have pertinaciously held on to the miserable small varieties of strawberries and raspberries of twenty years ago,

which has defeated the few attempts at growing these fruits. I have also yet to see the first earnest attempt at grape culture. It is notorious that New-York is most inadequately supplied with the finer varieties of small fruits. Even the little that is seen is sent from immense distances—some of the best from Knox of Pittsburgh, over 400 miles from New York. This deficiency in the finer sorts of small fruits should be remedied.—*Tribune.*

COMMON IVY.—Ivy is not a parasite as commonly supposed, but has its roots in the earth, and simply adheres to the trees or other props by which it is elevated into the air. If the thick stems, which may always be observed at the base, be cut through, it usually dies like any other plant. The diameter of these stems near the ground is often 10 or 12 inches, and many are often found standing side by side. The age attained by ivy is probably to be reckoned by centuries, for though often found trailing weakly upon the ground, bordering sylvan walks, and entangled in hedges, its true place is the time-worn and roofless abbey, and the crumbling middle-age castle, from the romance of which it is inseparable, and with the history of which it descends, making antiquity picturesque, and affording at the same moment a powerful physical protection. Some of the largest ivies in England are probably those at Brockley Hall, Somersetshire, where they brace up the old trees with their friendly clamps, rendering them at the same time, as is the wont of ivy, cheerful in winter; and for beauty there are none to be found grander than those of Kenilworth. The lower walls of this famous ruin they ornament with green and shining arabesque; and from the upper ones they roll out magnificently in rich and massive cornices. The variety in the leaves of ivy is often thought to indicate a difference of kind. But it is a variety connected merely with different stages of growth. While young, and as long as the stems have a wall or tree to attach themselves to, that is to say, closely, as if they

were glued, inch by inch, the leaves are angular and three to five-lobed in innumerable variety; at this time also they are often beautifully tintured with red or purple, or veined with white, or wholly yellow, especially on the terminal and zig-zag branchlets that run like vegetable centipedes up trees and over the surface of damp walls and rocks. Mounting upwards by means of their root-like suckers, which are thrown out abundantly from the surface, the stems in due time reach the top of their support. They now elongate but little, becoming woody, and forming large bushy heads, which produce flowers and fruit, and the leaves of which are all ovate or elliptical, but still possessed of the characteristic polish, and with long petioles. Such leaves are produced only upon the branches that float into the air, when the plant is attached to trees or buildings; or that form a kind of edge along the top, when growing against an old wall; and it is only upon these, literally the very tops of the plants, that flowers and fruit are found. If the stem have suckers upon it, there are neither.—Examples are known of ivy ascending to the height of 100 feet before it becomes disengaged enough to blossom.—*Grindon's British and Garden Botany.*

PEDIGREE WHEAT.—The following article is extracted from Vol. IX of *Once a Week*: The results of Mr. Hallett's experiments are very wonderful and very suggestive. We have condensed the original account, in some measure, but without any suppression of essential facts.

"A gentlemen, (Mr. Hallett) whose farm I very recently had the pleasure of seeing, in the immediate neighborhood of Brighton, showed me and my friends the results of his experiments in the growth of wheat and other cereals, and explained the reasons of his undertaking them.

With good, strong, plain sense, it struck Mr. Hallett, what every stock-breeder knows, that from the largest and best animals the best stock was produced.—With this idea in his head he felt convinced

that the principal might be applied to grain. As a stimulus to pursue his plan, he fortunately discovered that in the grains of one ear of wheat one grain is to be found greatly to excell all the others in productive power. Thus by carefully selecting the seeds from the best ear, (for there is always one best ear amongst the tillers, and as was remarked, one best grain in it,) the result has been a growth of wheat perfectly extraordinary. Year after year these best grains have been put into the ground.

Mr. Hallett's experiments and success are well illustrated by the following facts: A gardener in Scotland was struck with the appearance of a blossom on a Sweet-William in his garden. He carefully preserved the seeds from it, and the following year had a still better flower, the seeds from which he also preserved. In this way he went on, year after year, for fifteen years, when he produced flowers nearly as fine as auricalus. This was his *ne plus ultra*. Whether Mr. Hallett will improve on his present large ears and their yield remains to be seen.—We cannot but think his experiment will end where they now rest.

In the year 1857, the original ear was $4\frac{3}{4}$ inches long and produced 47 grains. In the year 1861, the finest ear was $8\frac{3}{4}$ inches long and produced 123 grains, and also 80 tillers from one grain only. Thus by means of repeated selections alone, the length of the ears had been doubled and their contents nearly trebled, and the tillering power of the seed increased eight fold.

When we consider that eighty ears have sprung from one seed, some of which have from 16 to 18 sets up each side of it, this new development is little short of miraculous, and the product has been accomplished in five years by selection alone, and that on land which is, apparently, but little adapted for the growth of wheat. And what a sight presented itself when we viewed Mr. Hallett's large wheat fields and his selections in his garden! We shall never forget it. We have admired the blue sky, the calm lake, the sunny glade, the budding blossoms, and

the beauteous flowers; we have wandered on the sides of purling brooks, and seen the foamy sea in all its glory; but never do we recollect being more struck with admiration, and even wonder, than when we beheld the fine crop of his cereals. We mention cereals, because we include his oats and barley, both of which exhibited not only an extraordinary growth, but an enormous yield, some of the stalks of oats being at least seven feet in height.

But to return to the crop of wheat. It waved its pendulous heads to the slight breeze that blew, each ear giving promise of great productiveness, and, as far as the eye could reach over the waving fields, each ear was of the same great unusual length. Nor was there any crowding of the plants. Ample room had been given for each, and the consequence was, that the tillers were in due proportion to the space given.—There was also a great saving in the quantity of seed wheat usually sown, and the one peck per acre, planted by Mr. Hallett, or one bushel on six acres, if sown in August, allowing nine inches every way for tillers. All this is a great consideration, as well as a great saving of seed. Indeed, dibbled in the way Mr. Hallett recommends, even to twelve inches apart, a half-peck of seeds has planted an acre of ground."

This principle of selection has been employed in this country, both in grains and vegetables and fruits, and doubtless very valuable results would be secured by patient and pains-taking experiments in all departments of horticulture.

SEPTENNIS PSORIASIS.—Sidney Smith was once looking through the hot-house of a lady who was proud of her flowers, and used, not very accurately, a profusion of botanical names.

"Madam," said he "have you the *Septennis psoriasis*?"

"No," said she, "I had it last winter, and I gave it to the Archbishop of Canterbury; it came out beautifully in the spring."

Septennis psoriasis is the medical name for the seven years' itch.

TERRE HAUTE HORTICULTURAL SOCIETY.
—Officers:

President—Hon. R. W. Thompson.

Vice-Pres.—A. B. Pegg.

Treasurer—J. A. Foote.

Secretary—Jas. Gilbert.

Organized May, 1865.

WISCONSIN STATE HORTICULTURAL SOCIETY.—Annual Circular, 1865.—Officers:

B. F. Hopkins, *President*.

L. P. Chandler, *1st Vice-President*.

J. C. Plumb, *Cor. Secretary*.

J. W. Rist, *Recording Secretary*.

F. C. Curtis, *Treasurer*.

CORRESPONDENCE.

EDITORS HORTICULTURIST,

I HAVE been giving more or less of time this season to a specialty, viz., the examination of grape soils, location, and modes of culture, training, &c. I am not prepared, as yet, to say much *pro* or *con*; but perhaps a little record of what I have seen and heard this season may be of use to you in making up the pages of the HORTICULTURIST from time to time.

My observations at this time, taken in connection with previous years, convince me that while grapes of some variety may be grown in any soil, and almost any locality, there are really but few localities, and a small territory of soil suited to growing of grapes for making a fine wine. I do not think that, as a whole, the class of wines now made and sold will be tolerated ten years hence, and, therefore, the grower of grapes, looking to their manufacture into wines for profitable sale, must study well the quality of grape requisite, and the components in soil that will supply those requisites. My present impression of the value of soils for growing wine grapes is about as follows:

1st. Calcareous limestone.

2d. Calcareous clay.

3d. Limestone clay.

4th. Clay loam.

5th. Gravelly loam.

6th. Sandy loam.

The first and second will grow and ripen fruit containing a less per centage of acid than the third and fourth, while the fifth and sixth are soils in which I question the practicability of growing any grape, and

ripening it to form a wine without the addition of some foreign matter.

I know there are drift formations on some of the islands, and on the shores of Lake Erie, where the appearance is of a gravelly loam, and where the grape grows and apparently ripens well. I know, also, that it is believed by some that such drift formations contain within them materials to give all the requisites to good wine. I have yet to see the good wine, and, therefore, you may note that I leave out these localities in my estimate respecting gravelly loams. I wait to learn.

So much for soils. Now let me add that localities are best, as I now view the matter as follows: viz., 1st. Those abutting on large bodies of water, or where the prevailing cold winds of autumn and spring pass over the water, and within one mile of the vineyard.

2d. High hilly locations, where there are adjacent rivers or large ponds of water, and, as before, so placed that the cold winds of autumn and spring pass over the water and within half a-mile of the vineyard.

With the 1st or 2d class of soils, and either of the above locations—the land under-drained—profitable results may confidently be anticipated by the planter and grower of a vineyard, especially if bone meal and gypsum be added as a manure to the 2d class.

The territory abutting on the shores, and embraced in the Islands of Lake Erie, now devoted to grape culture, is probably over 5,000 acres. Of this 600 acres lay between Buffalo and Erie; 600 acres between Erie,

Pa., and Cuyahoga County in Ohio; 1,200 acres in Cuyahoga County; 200 acres in Loraine County; 700 acres in Erie County, exclusive of the Islands; 800 acres on Kelly Island, and 400 acres on South Bass, Middle Bass Peninsula, and parts of Ottawa County. The balance, 500 acres, we may safely assert, is to be found west of the territory here specified.

Of these 5,000 acres, three-fifths are probably Catawaba, two-fifths Isabella, and the remaining one-fifth made up of Delaware, Concord and other varieties. The distance apart in the largest proportion of the vineyards, I think, will be found six by eight feet; but nearly all recent plantings have been eight by eight and eight by ten feet. The crop this year will probably be on about 3,500 acres of the 5000, and will average, notwithstanding deductions to be made for rot and mildew, and the quantity of acres first year in bearing, say not far from two and one-half tons to the acre. This will give 17,500,000 lbs. which at an average price of seven cents per pound will be \$1,225,000 or \$350 per acre.

This is perhaps a low average, as there are quite a large number of acres on which from five to eight tons per acre will probably be gathered; but I prefer putting my estimates so that I can safely cover all the ground, as I then show a better return for capital invested than perhaps any other reliable and permanent interest will exhibit.

In connection with this, I want also to tell you that the Northern Ohio Grape Growers' Association will hold an exhibition of fruit, and meetings for discussion of qualities, at Sandusky on the 17th, 18th, and 19th of October; and that you, and all other Horticulturists, and especially grape-growers, are invited to attend.

Some other time, perhaps, I will write you my impressions relative to the times and modes of pruning, manner of cultivating, &c., &c.; but I think you have enough for the present. Yours truly,

F. R. ELLIOTT.

Cleveland, Aug. 27, 1865.

NEWBURGH, N. Y., Aug. 20th, 1865.

EDITORS HORTICULTURIST.

GENTLEMEN,—We have had the worst season heretofore known in this locality for "rot" and "mildew" of grape fruit and leaves. Broad Vineyards of Catawba rotted so badly as to show but few decent bunches, and to destroy three-fourths of the crop for any use. No other variety suffered such damage; and some kinds, and some soils produce an average crop.

The foliage of most of our newest sorts of "pot" grapes is more or less impaired; also, some mildew on their fruit occasionally.

Many persons took the bad advice "to trench two to three feet deep and enrich the border with well rotted manure before setting vines," and some carried the idea to the extreme of four or more feet with enriching to the bottom. Vines so planted have ever had mildew, and this season worse than ever; while some varieties of vines, grown in soil of moderate depth, not frequently stoned, have vines in good condition, and fine crops as ever before raised here, now ripening.

Very deep, rich soil, frequently forked over and soaking abundant drainage, ensures failure even with those best of grapes which require the richest borders of any hardy grapes grown here, viz: Allen's Hybrid and Delaware.

Adirondac, Allen's Hybrid, and Delaware vines have generally suffered the worst from mildew, because planters wishing to "pot" them have made extra preparation of soil, by deepening and enriching—hence the worst results.

Delaware Vineyards, three to five years, planted in proper soil, *not potted*, have, so far done finely, and the fruit is nearly ready for market. So Concord and Hartford on thin open soil, duly drained, have done as well as, or better than usual. Isabella, though generally injured by mildew on leaf, is promising fair. Rebecca, in suitable soil, very fine crop. Allen's Hybrid, properly planted, now have a splendid crop. Diana

never ripens here except on limestone debris, and rots badly in damp soil. Creveling is resisting disease very well and making good promises.

In short, bad as the season is, the right grape in the right soil, under right treatment is rewarding its owner well, while apples, pears, plums, peaches and cherries have failed almost entirely.

Yours, &c.,

SOUTH PASS, ILL., Aug. 21st, 1865.

EDITORS OF HORTICULTURIST.

Will you or some experienced cultivator give a list, say six varieties (or less, if there be not so many) valuable to cultivate for market, of peaches, pears, plums and grapes. By doing so you will oblige

A SUBSCRIBER.

Some of us are getting "Grapes on the brain" here.

Will some of our subscribers who have experience in the cultivation of fruit in the above locality, please send us a list of varieties best suited to their climate.—Eds.

OLNEY, ILL., Aug. 12, 1865.

THE Geranium is one of the most popular flowers, and it would no doubt gratify many of your readers to publish an article descriptive of its varieties, mode of culture, &c., and if possible suggest a good plan of keeping it over the winter without the necessity of a Green-house. Grapes are abundant here, although all varieties rot to some extent, except the Delaware. I have cultivated grapes for ten years, and of those growing on the side of my house I have never had any to rot or mildew. The iron scales, gathered from round a blacksmith's anvil, I have been in the habit of putting round my pear trees. I have never yet lost one by blight, and they bear abundantly.

Your's respectfully,

SAMUEL McCURE.

MESSRS. EDITORS:—

The remarks of your correspondent, "Harvard," upon my article in the August number of your journal, require an answer, which I will try to give without any of that pleasant "sarkasum," in which your correspondent seems to copy the great A. Ward. In regard to the *Corydalis glauca*, I admit that I made a serious blunder, but at the same time, I say that half the blame belongs to the accomplished chairman of the committee on flowers, who marked my specimens *C. Aurea*. In regard to the character of the other plants, and as to their being neglected, I simply affirm that I am very far indeed from being "singularly unfortunate in my choice of plants."

The *Corydalis*, *Arum* and *Houstonia* are mentioned in the transactions of the Massachusetts Horticultural Society for 1858, as being "sufficiently curious or showy to merit a place in every garden." My experience in cultivating wild flowers, and my good fortune in seeing them under cultivation, may be much more limited than that of "Harvard;" but never having seen the *Dracæna*, *Corydalis*, *Arum*, or *Sarracenia* cultivated outside of my own garden, I had a good right to call these, so far as my own observation went, "neglected flowers."

On the same ground, *i. e.*, my own experience, I repeat what I said in the article in question, viz: that the *Sarracenia* is impatient of removal. It has failed with me and with the only other cultivator whom I know to have tried it.

The *Calypso* was mentioned incidentally, more to call attention to it, and elicit some information if possible, than to class it strictly as a neglected flower.

It is a mere quibble to say that a plant is not neglected, (especially if it is a plant easily obtained,) because one amateur in five hundred happens to have a specimen in his garden.

My list of flowers was not made up

without some care, and apart from the mistake about *Corydalis glauca*, which now stands corrected, I cannot see that I have been careless, or done anything to mislead the readers of the *HORTICULTURIST*. Like Jack Bunsby, "What I says I stands to."

J. M. M., JR.

BOOKS, &c., RECEIVED.

PIONEERS OF FRANCE IN THE NEW WORLD, by Francis Parkman, author of "History of the Conspiracy of Pontiac," "Prairie and Rocky Mountain Life," etc.—Boston, Little, Brown & Co., Publishers.

In this series of Historical events, of which this volume is the first, and at the same time a distinct and independent work, we have two completed narratives; the first relating to the Huguenots in Florida, with a sketch of Huguenot colonization in Brazil; the second to Samuel de Champlain and his associates, with a view of earlier French adventure in America and the legends of the Northern Coasts. The care and research bestowed on this volume ranks it at once as a standard Historical work. Evidently no pains have been spared in exhausting every resource of information, and placing the same in a truthful, concise and entertaining form. Mr. Parkman is known to our readers as the author of the valuable articles on Hybridization and the Culture of the Rose.

THE Publication Committee of the Entomological Society of Philadelphia, purpose to publish, and issue gratuitously, an occasional bulletin, under the title of "THE PRACTICAL ENTOMOLOGIST," in which papers on the Insects injurious and beneficial to Vegetation will be given for the benefit of the American Farming interest. It is hoped that the information intended to be imparted through this medium, will be of use to the Agriculturists of this country,—a class which comprises the wealth and

strength of the population of the United States,—by leading them to study critically the Entomological fauna which surrounds them, and to derive from their knowledge thus acquired, the power to increase the production of their crops and develop the interest which they represent.

DOMESTIC POULTRY.—Being a practical treatise on the preferable breeds of farm yard poultry, their history and leading characteristics, with complete instructions for breeding and fattening, and preparing for exhibition at poultry shows, &c. Derived from the author's experience and observation, by Simon M. Saunders. Very fully illustrated. Orange Judd, New York. Price in paper cover 30 cts., bound 60 cts., post paid.

HOP CULTURE.—Practical details from the selection and preparation of the soil, and setting and cultivation of the plants; to picking, drying, pressing and marketing the crop. Plain directions as given by ten experienced cultivators, residing in the best hop growing sections in the United States. Over forty engravings.—Orange Judd, New York. Post paid, forty cents.

MANUAL OF FLAX CULTURE.—Seven prize essays on the culture of the crop and on dressing the fibre, with other essays and statements, copious illustrations, and a glossary, all by practical flax growers of various parts of the United States, Canada, Ireland and Germany.—Orange Judd, New York, post paid 50 cents.

B. K. BLISS' AUTUMN CATALOGUE of Dutch and Cape Flowering Bulbs, for sale by Benjamin K. Bliss, Springfield, Mass. Price of Catalogue 10 cents.

VICKS' ILLUSTRATED CATALOGUE of Hardy Flowering Bulbs, and Guide to the Flower Garden for the Autumn of 1865.

SELECT LIST OF DUTCH BULBOUS ROOTS, imported and for sale by Henderson & Fleming, Seedsmen and Florists, 67 Nassau Street, New York.

PRICED CATALOGUE OF PLANTS, grown and for sale by E. Williams, Montclair, N. J.

ROYCE'S PRICE-LIST OF GRAPE VINES for 1865, with an address to those interested in Grape Cultivation. Dr. W. A. Royce, Newburgh, N. Y.

CATALOGUE, No. 4 — Genesee Valley Nurseries, Rochester, N. Y. Frost & Co's Wholesale Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Bulbs, &c., for Autumn of 1865.

BRIDGEPORT NURSERY TRADE LIST OF VINES for Autumn, 1865 and Spring, 1866. John W. Hinks & Co., Bridgeport, Conn.

LAKE SIDE NURSERY, Madison, Wisconsin.—J. C. Plumb's Descriptive Price-List of select fruit, Evergreen and Deciduous Trees, Vines and Shrubs adapted to the North-west.

REID'S NURSERIES.—Catalogue for 1865 and '66 of Fruit and Ornamental Trees, Flowering Shrubs, etc., cultivated and for sale by David D. Buchanan, successor to the late Wm. Reid, Elizabeth, N. J.

VINELAND GRAPE NURSERY, Vineland, N. J.—J. W. Cone Proprietor. Price-List for fall of 1865.

KNOX'S FRUIT FARM AND NURSERIES.—J. Knox, Box 155, Pittsburgh, Penn. Price list of small fruits, &c. for the fall of 1865.

1865 & 1866 —WHOLESALE CATALOGUE of J. M. Jordan's Nursery on Grand Ave., St. Louis, Mo.

WHOLESALE PRICE-LIST for the Autumn of 1865 and Spring of 1866. Bronson, Graves & Selover, of the Washington Street Nurseries, Geneva, N. Y.

WHOLESALE PRICE-LIST of the West Avenue Nurseries for 1865-6. A. C. & G. T. Fish, Proprietors, Rochester, N. Y.

PRICE-LIST OF VINES for fall of 1865. Chas. H. Zundell, Hempstead, Queen's County, N. Y.

RYDER & Co's ANNUAL CATALOGUE AND PRICE-LIST OF GRAPE VINES for 1865, Sing Sing, N. Y.

SELECT CATALOGUE of Fruit and Ornamental Trees, Vines, Shrubs, &c., cultivated and for sale at the Bridgeport Nursery, Fairfield Co., Conn., by J. W. Hinks & Co.

DESCRIPTIVE CATALOGUE of Fruit and Ornamental Trees, Shrubs, Vines, Roses and Exotic Plants, cultivated and for sale at the Commercial Garden and Nursery of Parsons & Co., Flushing, Long Island, near New York,

J. F. DELIOT, ANNUAL CATALOGUE AND PRICE-LIST of Grape Vines for 1865-6. Sing Sing, N. Y.

TRANSACTIONS of the Indiana State Horticultural Society at its Fourth Annual Meeting, held at Indianapolis, January 3d, 4th and 5th, 1865.

TWELFTH REPORT of the Ohio Pomological Society, embracing the annual meeting for 1864, held at Painesville in December 1864, and of the *ad interim* Committee at Cincinnati, Pittsburgh, etc., in 1864.

JOHN W. BAILEY'S Trade-list of Grape Vines for Autumn, 1865, Plattsburgh, N. Y.

Grape Cuttings from History, and several other valuable articles, in type, will appear in the November number.

THE HORTICULTURIST.

VOL. XX.....NOVEMBER, 1865.....NO. CCXXXIII.

VILLAGE AND COUNTRY ROAD-SIDE.

EVERY christian dweller, in village or in country, owes a duty to his road-side; which, if he neglects, he relapses—horticulturally speaking—into heathenism. This duty is to maintain order and neatness; and he is no more relieved of this duty because the highway is assigned over to public convenience, than he is relieved of any other duty whose accomplishment must of necessity contribute to the public convenience and public education, as well as to his own. Because my front entry is shared, for all legitimate purposes, with my friends and chance callers, shall I therefore treat it with neglect and allow the dust and cobwebs to accumulate about it, while I ensconce myself churlishly in my well swept den? Yet, every visitor—unless he be a vagabond fruit stealer, or an equally vagabond bird-killer—comes up the road-way, and if you choose to put him through a course of scoriæ, and old tins, and tansy tufts, and briary heaps of stones along your road-side, you might as benevolently and as prudently, (so far as the growing tastes

of your children are concerned), lead him up to your front door between piles of gaping clam shells. There is no rule of order, or of taste, or of benevolence, that belongs to a man's door-yard, that does not belong to his road-side.

It is true, there is a liability outside the fence to the incursions of road-menders, who are, for the most part, barbarians; but there is no more reason for not covering or removing the odious traces of these brutes, than for not removing the disagreeable traces of others. An ugly yellow scar in the turfy mound that supports, maybe, your garden wall, by due attention, and a shovel full, or two, of fresh mould, can be thoroughly obliterated; but if submitted to the swash of the rains, it gapes and throws off a great ooze of yellow mud, which, next spring time, tempts the foraging shovel of the road-menders again, and in a few years your whole road-side is a disorderly line of jagged earth-pits, with raw boulders clustering at the front of each. A little timely care, often repeated, may at last win upon

the regard of the barbarian followers of the scraper and hoe, and they may grow unwittingly into a respect for your love of order. Such miracles are subject of record. A safer alternative, however, if your road-side be no more extensive than that of my friend Lackland, is to supply yourself, an occasional defect in the road-bed from the screenings of the coal, or the rakings of the garden, by which you may easily secure so even and compact a surface, as to escape the attention of the road viewers. If, on the other hand, the reach be long, an arrangement can sometimes be made with the select-men to keep its whole extent in perfect condition, for a sum which if it be small, will be remunerative in the exemption it gives.

I say sometimes such convention may be established by an order-loving individual, but not always. Your true old-style representative of a select-man always scents some party bargain, or sly scheme in such a proposition—most of all if the proposals run below current rates. Indeed, if it were desirable for prudential reasons to keep the world from revolving as it does, I think the matter (if feasible) could be most safely entrusted to the “select-men” of a country town. I do not know any better types of old fogysm than the average of black-coated select-men, who will meet ten evenings to discuss a nine-penny bridge, and spend six months of consideration upon the opening of six rods of new highway. If the Pacific Railway is ever completed, (as I hope it may be) I would suggest that a committee of “select-men” from our country towns, (with a change of linen and the last week’s paper) be put through on the first car,—in the hope of opening their eyes to at least one current fact of the age. I am sometimes tortured with the notion that after twenty years of spectacted observation, (I do not yet wear spectacles) and after twenty years of voting the “rig’lar” ticket, I may become a candidate for the office of select-man. The thought oppresses me like a night-mare.

To return to road-side,—I know nothing which contributes more to that air of thrift, which should belong to every country town-ship, than neat and orderly road-sides; and when I say neat and orderly, I do not mean any finical arrangement of turf, or clipping of the road track, but only such judicious combing-down of unsightly roughnesses, such watchfulness against encumbrance, such adaptation of existing shade trees, or such planting of others, as shall show that the adjoining proprietor does not limit his charities by his own walls, or his eye for neatness by the line of highway.

Once upon a time, when the writer was in search of a country homestead, he remembers deciding against certain “highly recommended” places, because the high road to them led through a considerable array of suburban houses, whose occupants made it a religious duty to throw all their offal in the public street, and to cumber the same locality with their hoop-poles, or their wood-piles, or their shoe-parings. It is so hard to unlearn such a noisome depravity of taste! Many of the small towns on the banks of the Hudson, (near to New York) and in New Jersey, offer an extended exhibition of this sort of local economy and fragrant treasures. And I have sometimes thought that New York citizens, by reason of the offal in their streets, become quite agreeably wonted to such disposition of cast-away bones and filth, and scent it, upon their drives to their country homes, with an appetizing relish. But in the name of all true rural delight, I beg to enter protest, and to urge every man who has his homestead under green trees, to use what influence may lie in him (albeit he is not select-man) to abate the nuisance, and to make our village and country road-sides smack of order and thrift and cleanliness. Good example will do very much in way of reform—more, in most instances, than any zeal of preachment. If you approach an old school neighbor, who has inherited the propensity to cumber the highway before his door with all conceivable odds and ends, with any

suggestions for a change on the score of neatness or good looks, you will find him, very likely, fortified with his own "idees" on that subject—"idees," which, like the independent American citizen that he is, he is in no mood to relinquish.

"He can't git a livin by looks," and with such speech shrewdly uttered, and emphasized with a rattling horse-laugh, he floors your blandest suggestions. Yet a wholesome attention to neatness on your own score, which shall creep up to the edge of his enclosures, and work by contrast, will, in time operate insensibly upon him.—There is something after all "very catching" in good order.

But most of all, co-operation of all the town's people disposed to neatness is to be relied upon. Every country place of any size should have its "village-improvement society," to look after the planting of shade trees, the proper condition of highways, the arrest of stray cattle, and to discuss and carry into execution whatever may promote the thrift and attractive appearance of the place,—whether in the way of new streets, laying down of side-walks, or removal of offensive debris or noxious weeds. And if such a club could have their little room for occasional meeting, and stock it with a few valuable horticultural and agricultural books and papers, so much the better. An entirely new air might be given to very many of our slatternly country villages in a few years, by the energetic operations of such a club, and the value and attractiveness of property be correspondingly increased.

Most of the North-eastern states have, within a few years, by legislative enactment, outlawed all strolling cattle. This is well, and relieves from a great nuisance. But in not a few broad-streeted towns there has sprung up in consequence, a rank growth of weeds, (formerly kept down by grazing cows), which, as it seems no individual's concern, are allowed to ripen their seeds, thus multiplying next year's labor in the fields, beside offering a terribly

straggling appearance. In fault of such co-operation club as I have hinted at, (which should order them cut at common expense) every man should see to his own frontage. If such nursery beds had not been tolerated, we should long ago, I think, have scotched the Canada thistle, if not that detestable weed, the wild carrot.

At a considerable remove from towns, we frequently come upon some quiet streak of country road, charmingly bordered with a wild sylvan tangle of hickories, sumacs, brambles, cedars, and all festooned perhaps with the tendrils of the wild grape, or the bittersweet. Neither economy or good taste command the removal of these, even when bordering cultivated fields, except (which rarely occurs) they harbor bad weeds to spread within the enclosure. Nay, in nine cases in ten they furnish a grateful shelter from the winds,—a matter too little appreciated as yet, either by fruit growers or grain growers. And on the score of taste, no more charming contrast can be devised than that of such wild profusion of growth, with the neat and orderly array of crops beyond. I can recall no more delightful rural scenes in England, than certain ones in Devonshire, where, after strolling along some admirable bit of Macadam, with high hedge rows on either side, sprinkled with primroses, and tasseled with nodding ferns, and wild with jangled thickets of bramble, I have, with a leap, broken through and seen beyond,—so near the road I could have tossed my hat into the field,—such trim lines of emerald wheat,—without ever a weed or a crook,—as made the heart rejoice. The high hedge rows are indeed now being cut down throughout the best cultivated districts, but only for the economy of land, the surface occupied being needed. But while we have country roads from five to six rods wide, the same objection does not obtain with us. Observe again, I beg, that I do not counsel the planting of any such road-side tangles, or indeed the sparing of them, when *any better use can be made of the land*. I only plead for their continued

presence in place of a rude hurly-burly of stubs and harsh boulders, to which condition many farmers reduce them, and call it a judicious "slicking up."

I have run widely away this month from the little homestead of my friend Lackland; but if I should ever have the pleasure of

again meeting the HORTICULTURIST readers upon these pages, I may possibly revive their recollections of him, and look in once more upon his pig, and his cow, and his fruits.

Edgewood, Oct., 1865.

THE RICINUS.

BY EDWARD S. RAND, JR.

THIS plant, familiarly known as the Castor Oil Bean, was originally a native of the East Indies;* it has, however, been grown in all tropical countries from very early times, and has become naturalized in many places on either continent.

In Spanish countries it is commonly called "Palma Christi," under which name it is not unfrequently found in our own gardens. The application is evident to all who know the plant, and are familiar with its large expansive palmate foliage.

As an ornamental plant, either for massing or for single specimens, we know nothing its superior, and the new varieties which the last few years have given us, enable us to effect very striking combinations. There has, however, been much confusion of varieties, arising either from carelessness or ignorance, and the object of the present article is, not only to call attention to the plant, but to give a descriptive list of varieties which we have proved true, received from different sources, and which we can confidently recommend from our experience of the past few years.

There is nothing more mortifying to the gardener or amateur planting for a certain

effect than to have his plants turn out false to name, and thus his calculations come to naught. Where a mass of red is wanted a mass of white may be totally ineffective, and this mistake has often occurred in our plantings of Ricinus;—in fact we never had a whole paper of seed come true to name. Strange to say, we have been unable to find any article upon this plant or its cultivation in any domestic or foreign periodical, save a short notice of a "Tree Ricinus," in the "*Revue Horticole*" for 1861.

The plant, as we have said, is a native of the East Indies. The most common species, indeed that from which all the others have probably sprung, is *Ricinus communis* of Linnaeus. From this we have many species and varieties, somewhat confused, but which, with ordinary care, (as far as our experience goes), invariably produce themselves from seed. Even the "Tree Ricinus" does not constitute a different species; it is but the primitive type of those we cultivate as annuals, owing to the shortness of our season. If these were protected during the winter, the stalk would become woody, (in fact with us it is often hard enough to turn the edge of a knife), and the plant would continue to grow. This Tree Ricinus grows at Nice, in Algeria, and even in the latitude of Montpelier, in France, where a protection of straw wound around the trunk suffices to preserve it during the coldest winters. In our climate, of course, greenhouse protection would be required, and while the plant is too large for small houses,

* There is some conflict of authority as to the native country of the plant; it was well known to the ancients, and was by them used medicinally. It has been so long naturalized in all tropical countries, that though the probabilities are it was originally from the East Indies, it cannot be thus stated with certainty. For an interesting account of the production of Castor Oil in his country, see new American Cyclopaedia.—(Castor Bean.)

planted out in a conservatory, it would be most effective.

The seeds usually sold by seedsmen are of two kinds, named *R. communis major* and *minor*: the former has red stalks, midribs and fruit; the latter is glaucous white; of the former, *R. sanguineus* is an improved variety; of the latter, *R. macrocarpus nanus*.

The Ricinus is one of those plants which should always find a place where there is room. It is cultivated chiefly for its foliage which is most effective in the flower garden or shrubbery; for a mass upon the lawn there is nothing better. Even the dwarf varieties are of tall habit; and the tall growing species often attain the height of ten feet in a single summer. All are remarkable for elegant habit; the tall stalks from six to nine feet in height, of red, green, or glaucous white, leaves large, palmate or peltate, with strong midrib of the color of the stalk, and with seven deep lobes, deeply serrate, and often covered with a rich bloom of flowers in purple clusters, the barren at the bottom of the spike greenish white or canary yellow, the fertile at the top generally reddish, and the large spikes of prickly capsules, all combine to render the plant singularly effective for decorative purposes.

The flowers are curious but not showy; they are very transient and often fall unnoticed; they vary much, however, in size and beauty in the different varieties.

The plants are raised from seed, which, in favorable seasons, ripens freely.

This may be sown in the open border, where the plants are to stand, about the middle of May, or as much sooner as the the ground becomes warm; if sown early the beans decay. As the plants are very large and do not bear transplanting well, a distance of at least two or three feet should be left between them. In favorable seasons, the seeds vegetate in a few days, coming up with large seed leaves. From this time forward they grow with great rapidity, and by the first of August, are often six feet high and in full fruit.

Seed planted in the open border, how-

ever, will seldom perfect fruit, except in a most favorable season or a particularly warm locality, in our New England climate; we therefore, to obtain seed, as well as to gain a month in the display of foliage, must anticipate a little the opening of spring; to do this we sow the seeds in a hot bed.

Our method, which has proved most successful, is as follows:

From the first to the tenth of April, prepare a hot-bed of medium force; as soon as the heat is up put on a foot of tan; plant the seeds in a rather rich compost in small pots, one in a pot, rejecting all seeds that are soft or dull colored, and being careful to mark the variety on a label thrust firmly into the pot; plunge the pots up to the rim in the tan, and sift about half an inch of fine tan over the whole; give a copious watering; draw on the glass, and cover all with a mat or a board shutter. The seeds will be up in from thirty-six to forty-eight hours.

Remove the mat or shutter, and by giving air and light gradually, harden off the plants, opening the frame on sunny days, but being careful to prevent any chill.

Care should also be taken not to make the frame too deep, as the plants would become drawn and weak. If plenty of water is given the growth is very rapid, the roots soon fill the pots and the plants require shifting. This may be necessary several times before the weather is mild enough to plant them out. About the middle of May will be the earliest time they should be set out, and the first of June is often better; never till the weather is settled. The richer the soil the better, as thus the growth and production of foliage, which we wish to encourage, is more luxuriant. In dry weather water should be freely given. We have noticed, however, that a close clayey soil is not as favorable to healthy growth as a rich light mould.

The plants may be raised in a greenhouse, but are usually drawn and spindling.

A word regarding saving seed. When the capsule begins to ripen the thorny covering peels off from the hard horny shell;

the capsule, before erect, inclines downward, splits into three (or in few cases two) divisions, held together at top and base, and finally each division springs open with great force, throwing the bean to a considerable distance. The ripening of the seed should be watched, and the capsule gathered while still clinging to the stem.

The seeds of all the species are very beautifully marbled; it is from these the oil is obtained. They retain their vitality about two years, though we have had seed vegetate when five years old.

The plant is killed by the first frost, becoming black and unsightly.

The following species, or rather varieties are distinct:

R. communis, var *major*.—This is probably the parent of many of the finer varieties. It is a tall grower, with red stalk and large spikes of reddish brown seeds, very ornamental, but inferior to its varieties.

R. communis, var *minor*.—Of dwarf habit, glaucous green, and very pretty, but as the last, inferior to its varieties.

R. sanguineus.—Plant of tall habit, stalk and petioles dark glossy red; seed-spike very large, often a foot long, red and yellow; barren flowers white, fertile red; leaves dark green, with glossy red midribs, often two feet across; seeds very dark, marbled.

R. Borboniensis arboreus.—A tall plant of stout stocky habit; stalk covered with glaucous bloom, producing shoots freely from the axils of the leaves, giving the plant a shrubby appearance; foliage glaucous green, with pink midribs, deeply serrate; leaves very large, often more than two feet across. The young foliage has a beautiful coppery lustre; male flowers very plenty, greenish; female fewer, green and red.

This is a most beautiful species; it is late in coming into flower, and with us does not ripen seed.

R. nanus macrocarpus.—A smaller variety than any of the preceding; leaves small, seldom exceeding ten inches in diameter; stalk and petioles glaucous; plant branch-

ing; flowers greenish. A full bloomer, very conspicuous from its large spikes of dark green seed vessels. Seeds very small.

R. spectabilis.—Of very tall habit. Stalk green, with heavy glaucous bloom, seldom branched, crowned by an immense spike of seed vessels. Barren flowers yellow; fertile reddish; seed capsules very prickly; leaves more than two feet across, roughly serrate, with large green midribs. A fine variety.

R. macrocarpus.—Somewhat resembling the last in appearance and foliage. Stem covered with purplish glaucous bloom; plant much branched and bearing many seed spikes; barren flowers canary yellow; fertile reddish.

We have a variety of the preceding which differs in being less glaucous, of dwarf habit, and in the capsule never bursting, and the divisions of the capsule being so soft as to be easily rubbed off from the seed, and never horny as in other species.

R. leucocarpus.—A smaller plant than any of the preceding. Leaves green, with yellowish red midrib, hardly ten inches across; plant much branched, every part covered with light blueish bloom, which, rubbed off, shows a red stalk, &c. Flowers canary yellow and red. Seed spikes plentifully produced, but very short, with few small capsules.

R. Tuniciensis.—A tall growing, branching variety. Stalk and petioles red; leaves light green, with yellowish midribs barely a foot across. Seed spikes freely produced, small, without bloom; very prickly. Seed small, dark; a showy variety.

R. new species from Phillipines.—Under the above title we received a very distinct plant. It is somewhat in the way of *R. sanguineus*, but of a greenish cast; leaves often light green, with no bloom; stalk reddish green; young foliage glistening of metallic lustre; flowers reddish green; a tall grower; stalk seldom branched.

There are other species we have not yet sufficiently proved, on which we hope to report in due time.

Glen Ridge, Oct., 1865.

GARDENING.

BY J. M. MERRICK, JR., WALPOLE, MASS.

I do not know what exclusive right angling has to be called the contemplative man's recreation.

Isaac Walton, to be sure, calls it so—and so it is; but not to the prejudice of gardening, the pursuit of which tends certainly to reflection and contemplation. The skillful gardener, whose heart is in his work, can hardly fail to become a thoughtful and self-contained man. If an undevout astronomer be mad, an undevout gardener certainly is, for he is familiar with mysteries no less wonderful than those of the stargazer. As Dr. Johnson saw in Thrall's wash-tubs, the potentialities of growing rich beyond the dreams of avarice, so the true gardener sees in his vines and strawberries, in his pear trees and melons, the potentialities of satisfaction beyond the dreams of those who are not yet initiated into the sacred mysteries of Ceres and Pomona. Of satisfaction, be it marked, not wholly of the gross and sensual comfort of devouring the choice fruit he tends, but of the higher and more complete pleasure of thinking that by *his* skill were these miracles helped to perfection.

I find the pleasure of raising fruit, tending and trimming vines, watering in dry times, and sheltering from the sun in hot, equal or more than equal to the pleasure of eating the fruit when ripe.

For, a bunch of grapes is eaten and gone, it was and is not; but there is left the vine, which you may train and trim to suit your caprice, and over which you may study and ponder and addle your brain as often as a new and complete manual is published.

And herein, *i. e.*, in training and trimming, consists, I suppose, a great part of the fascination that attends the whole matter of horticulture. A vine is unlike anything else. A pear tree or an apple tree

must be grown in a stiff upright form; or, if we do train it on a wall, it looks unsightly and unnatural. But a vine, on the other hand, bends under your fingers. It may go this way this year, and that way next; now horizontal, and now upright; now a single stick with bunches on spurs, and now an elaborate system of cordons and triple shoots. In short, it is clay in the hands of the potter, and the fertile brains of experimenters are racked to find a way in which it will *not* grow, flourish and bear fruit.

A man gets very intimate with vines and trees and plants. He has had a hand in shaping and adjusting their growth, supplying their wants, and fighting their enemies, and in the end they have become, as it were, his children. If some Bœotian heel comes down upon a favorable strawberry, the last perhaps of a dozen of its class, he feels as keen a pang as if his most tender corn were crunched; and to lose one of the arms of his pet Iona, is next to losing an arm of flesh and blood.

Since April, I have had little to do but to potter about in the garden and watch my plants. In doing this, I have realized the truth of Thoreau's saying, that "the simplest occupation, any unquestioned country mode of life which detains us in the open air, is alluring. The man who picks peas steadily for a living is more respectable; he is even envied by his shop-worn neighbors. We are as happy as the birds when our Good Genius permits us to pursue out-door work without a sense of dissipation."

I have found Thoreau is right, and I have felt unmixed delight in watching my Agriculturist strawberries put out leaf after leaf, until they made stools as big as a half bushel; or in observing day by day how the little Delaware grapes, waxed and

throve, reached their full size, became translucent, and then began to condense the hot September sunshine, and acquire the color and flavor that makes them without a rival in our long list of Autumn fruits. I have, I suppose, spent hours in watching with silent wonder, my Rogers' 15 vines. They climb to the top of the trellis in June, and then wherever cut or pinched they throw out duplicate or triplicate spurs. that would gladden the heart of a Thomey man. Meantime the bottom shoot thickens up, and a vine two years old looks like a five year old vine of any other kind. Much time too have I spent on my knees and in other painful positions, watering, weeding, and digging around about twenty kinds of new strawberries. I bought them, partly because I am fond of novelties, and partly because I was assured that every one of these varieties was better than any known kind. In some of them I have had much ado to keep the breath of life, and some have perished miserably in spite of my pains. I may perhaps give my paper a more practical turn if I note down the characteristics of some of the new varieties, so far as they are shown by their leaves and manner of growth.

The *Lucida Perfecta*, I hold to have the most beautiful leaf of any strawberry I know, firm, glossy and strong. The whole plant is a model of beauty.

Madame Cologne has a fine habit of growth, dark green, but not glossy leaves; grows readily, and makes a moderate number of runners.

The *Exposition à Chalons* and Myatt's *Quinquifolia* are poor, feeble growers, seeming to be sickly and in an uncongenial home, whatever you may do for them.

The *Haquin*, a strawberry which Mr. Knox says is *not* new; is distinguishable among many kinds by the peculiar green of its leaves; something like a faded window blind. New or old, it is a good strong plant.

The *Orb* and *Lucas* are good growers and

make fine plants, with nothing peculiar about them, except that the foliage of the former is very dark.

La Negresse is a poor grower at first, making a strong contrast with the *Frogmore*, which stands next to my *Agriculturist*, and though of a wholly different type, is quite a match for them in size and health. I have seedlings of my own coming on, which may beat all kinds yet known. I am already casting about in my mind, for a name for my best plant, when I shall find which that is.

Speaking of strawberries, I should like to know why the critics are so cruel, mor-dacious and truculent towards the graceful little story, "Needle and Garden," that has just come to a close in the October Atlantic. The story is charming of itself, and so pleasantly told, that it carries with it an air of likelihood, and we say of it, *si non e vero e bene trovato*. Perhaps after all, it is a true story, (like Robinson Crusoe) but needs horticultural readers to appreciate it. At all events, it charms and interests the lucky reader who takes the *Country Gentleman*, and has Wilson's Albany Seedling in his garden, and is worth more to me than an acre of Gail Hamilton's platitudes. But then we must have patience with the critics. They probably, like many of the strawberry girl's customers, do not know whether the berries grow on a vine, or on a tree. Much less could they tell a Jenny Lind from a Wilson, twenty feet off. The whole story is a practical sermon, with the same text that some have which have been preached in the columns of this journal, viz: The practicability of woman's extending her sphere of labor. Whether founded on fact or not, (and the Philadelphia readers of the HORTICULTURIST might find out and tell us) it points out one of many occupations to which women can turn their hand, and relieve themselves from the drudgery of the needle.

Hoeing strawberries is healthier work than bending over a sewing machine. We trust that those chapters will not be the

Strawberry Girl's last contributions to the Atlantic.

"*De gustibus non opus est fustibus.*" I have never realized the full meaning of this old proverb, until this year, in listening to the comments made by various people on different kinds of grapes. Some are ready to do battle for the toughest and nastiest wild grape, affirming, because they are used to nothing better, that it is "good." Others pin their faith on the Concord; a more refined taste seeks the Diana, if ripe, and others hesitate between that and the Delaware. Very few, however, who can get Dianas and Delawares enough, go back to their old favorites.

A skillful grower of vines, and well acquainted with the different kinds, writes to me this week, that he has some perfectly ripe and well grown Concords, and that he thinks they are "horrible."

I cannot speak so harshly of so faithful a friend as the Concord, but I am willing to admit, that as a grape for the table, it is as much below the Delaware, or the fully ripe Diana, as it is above the wild kinds from which it sprung. As a grape for wine, it will be a long time before the Concord goes out of fashion, either in Massachusetts or the West. I have this year had the satisfaction of tasting Concord wine, one, two and three years old, made by the skillful hands of the originator of the vine, and it was of most surpassing excellence.

I should think it needless to extol the Concord as a wine grape, if there were not some people who condemn it *in toto*. I myself admit that it has a dangerous rival in the garden, in Rogers' 4 and 19.

I have been coaxing along one Adirondac this year. In a soil where the Delawares, with half the attention, grew like weeds, it stood still about two months; then it took a start and grew well, and at last it mildewed as bad as any English gooseberry. So did an Israella standing by its side; but my Ionas, though small vines, resisted the mildew heroically. Neither they, nor, strange to say, my Allen's Hybrids, show a single

speck. Both kept their leaves bright green till frost, and ripened their wood to the very tip. All through August I fought mildew with sulphur and a tin dredging box, wishing I had a bellows to blow it on to the vines. But it, (the mildew, not the bellows or the sulphur) stopped of itself about the first of September, and though at one time it threatened to do a great deal of damage, did very little, at least, in my neighborhood.

Since my article in the October number of this journal was written, I have had the satisfaction of testing and examining critically twelve numbers of Rogers' hybrid grapes from the original vines.

This examination was a source of great pleasure to me, as it removed the last shade of doubt I might possibly have felt as to these grapes being genuine hybrids. I procured the grapes for the purpose of getting the seeds, and was astonished to notice the wonderful difference in the seeds of the various numbers; some being round and plump, others long and thin, and much like the seeds of foreign kinds.

In general, I suppose the excellence of the grape is in direct ratio to the smallness of its seeds. Compare, for instance, the seeds of a wild grape (*Labrusca*) with the delicate little seeds of an Iona. The difference will be very striking.

Good things are multiplying so fast that it will be necessary to enlarge our gardens year by year, or else to be continually pulling up second rate plants and throwing them into the road.

This brings me back to where I started, —the garden—and as parting advice, I say, keep your long-handled spade and your hoe sharp, and keep them agoing all summer long, bearing in mind the words of Evelyn, as quoted by Thoreau: "There is, in truth, no compost or lætation whatsoever, comparable to this continual motion, repastination, and turning of the mould with the spade. The earth, especially if fresh, has a certain magnetism in it, by which it attracts the salt, power, or virtue

(call it either) which gives it life, and is the logic of all the labor and stir we keep about it, to sustain us; all dungings and sordid temperings being but the vicars succeeded to this improvement."

"Even if the earth does not attract vital spirits" from the air, as Sir Kenelm Digby thinks it does, the spader certainly will.

A REPLY TO REUBEN ON THE COLOR AND HARDINESS OF PLANTS.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

IN the notes in the August Number by Reuben, he makes the following comments upon my article on the color and hardiness of plants:

He says—"A well-prepared article, and evidently from careful study, but yet does not convince me that it is sound. I would know how long these experiments have been tested: the soil and condition of it, whether dry and under-drained, &c. &c." "I however, cannot think that the color of the petal of a flower or the pellicle of the fruit has aught to do with the hardihood of the plant. A dark wood and dark green foliage may have to do in the ratio supposed by the Doctor. I shall be glad to read more of his observations."

In the article referred to, I did not pretend to give any argument upon the subject, simply stated the results of my experiments, which have been conducted through upwards of twenty years of observation and research—the last ten by practical demonstration. In an article on the health and diseases of plants in July No., 1864, the subject was discussed to some extent; but as facts are more convincing than argument, I have stated them, and left the subject open for the observation of others. It would be too tedious to go into detail at this time, and give the particulars to show how I arrived at those conclusions; yet it might be interesting to know that I had collected upwards of one thousand varieties of apples, two hundred and fifty of roses, eighty of verbenas, sixty of geraniums, fifty of strawberries, eighty of potatoes, fifteen of rhubarb, forty of peas, thirty of beans, numerous

other vegetables, plants, flowers, novelties, and thousands of seedlings. I have collected all the information I could respecting them in other localities.

These experiments have been made first by growing them on good suitable well-drained soil in close proximity under similar conditions. Secondly, separately, as far as I could, under like and unlike circumstances. Thirdly, by collecting the facts of others in regard to their health, constitution, and hardiness, and how they resisted the sudden and extreme changes of temperature. Fourthly, by comparing the effects of cold, wet seasons with hot dry seasons, and the sudden and extreme variations of temperature.

The evidence thus collected appears to be conclusive, that the health, vitality, and hardiness depends upon the amount of heat the plants absorb, and this is in the relation to their color.

Reuben thinks the color of the flower or fruit has nothing to do with the hardiness of the plant. If the color of the flower or fruit has nothing to do with the absorption of heat, then he is right; but on the contrary, if it has, then it affects the plant in that proportion. The flowers and fruit are a large proportion of the plant, but rather of short duration and at long intervals, consequently the effects produced are only in that ratio, otherwise but few plants could withstand the exhaustion. The leaves, buds, and bark being of longer duration, and a larger proportion, they produce the most marked effects, and if in a positive state, will control any other part of the plant in a ne-

gative state, minus that proportion. But when all parts are in a negative state we can very readily perceive the deleterious influence, no plant can withstand the exhaustion. Therefore, all plants that have a strong vitality, and are hardy, are in a positive state compared with others.

Any variegation of the foliage or bark of a negative character, shows incipient debility, disease, and degeneracy; but on the contrary, any variegation towards a positive state shows marks of health, durability, and improvement. Even when the bark, or foliage, is much speckled with white, it produces an effect; but when they are striped or blotched with white it produces a marked effect, which may be seen on those varieties.

The question is not simply does the color of the flower or fruit affect their hardiness *always perceptibly*; but is their health, vitality, and hardiness in proportion to the amount of heat the plants absorb, and is this in exact relation to their color, other conditions being equal. However, as a general rule, the color of the flower or fruit corresponds with the bark and foliage, and when either is well marked the effects are perceptible. In illustration of these principles, I have made a selection of a few varieties of fruit and flowers.

Summer Apples, Red Astrachan, Early Red, Red June.

Autumn Apples, Duchess of Oldenburg, Fameuse, Autumn Strawberry.

Winter Apples, Ben Davis, Wine Sap, Sweet Wine Sap, Red Russet.

Crab Apples, Showy Crab, Red Crab, Oblong Crab.

Native Grapes, Concord, Hartford Prolific, Oporto, Clinton, Norton's Virginia, Logan, Native Hamburg, Osee.

We have now given you a small list of fruit of dark color, which are hardy, healthy, and of strong vitality, which have resisted the vicissitudes of this climate.

Now, friend, Reuben, you can certainly make out an equal number as hardy and healthy of *light color*, if it has nothing to do

with their "hardihood." And if the color of the flower has nothing to do with the matter, please select an equal number of as hardy healthy, and strong growing roses, in the different classes of *light color*, as the following:

June Rose, George the Fourth, Paul Ricaut. Runners King and Queen of the Prairie. Pillar's Crimson Boursault, Russell's Cottage, Moss, Laneii, Luxemburg, Perpetual Moss, Abel Carriere, General Druout, Hybrid Perpetual, Prince Albert, Pius the Ninth, Lion of Combats, Paeonia, Triomphe de L'Exposition, Eugene Appert, Noisette, Fellenberg, Beauty of Greenmount, Bourbon Omar Pacha, Gloire de Rosamene, Bengal, Louis Phillippe, Purple Crown, Tea Hamalton, Lyon's Seedling.

And if there is doubt upon the subject of variegated leaf plants, let him compare the variegated Balm, Lonicera, Vinca, Deutzia, Hydrangea, variegata and aurea, with those that are not variegated.

But to fully settle this subject, let him compare the following *light colored* variegated leaf Geraniums: Alba Marginata, Florian, Hendersoni, Perfection, Silver Queen, Victoria, with the following of darker color and scarlet flowers, Boule de Feu, Maria Henry, Princess of Prussia, Sheen, Rival, Tom Thumb, Diadem.

The subject might be continued through all varieties of trees, shrubs, plants, and vegetation with the same results.

There is no subject on Horticulture which can be more easily and certainly demonstrated than the principles herein advanced.

We have not yet reached the most important and interesting portion of this subject, namely: the hybridization and production of new varieties, the cultivation and training of plants in harmony with this theory, the rapid advancement in this science, when these principles become generally known and applied. It will forever discard the idea of producing good healthy, hardy sorts from those of a negative character, or those which have such a tendency

as the following Grapes: Anna, Cuyahoga, Clara, Maxatawney, Rebecca, Cassidy, Taylor, or even the Catawba, Diana, or far-famed Delaware.

It will lead to a certain and scientific basis to start with, and will, therefore, save much time, labor, and anxiety by selecting only those of a positive character, either for seedlings or hybridization, as may be seen in the origin of the Concord, Clinton, and Norton's Virginia, or as Rogers Hybrids, so many good sorts produced from such indifferent positive varieties.

The principles herein advanced will explain why some plants and trees are hardy at one place and tender at another, and sometimes so on the same ground, by simply the soil, care and manner of cultivation. If you wish your plants healthy, keep them dark green by every process congenial to

their nature, that they may absorb heat carbonic acid and electricity.

If you cannot keep them so, substitute those naturally of a very dark color, and then keep them so by care and cultivation, or they will soon become diseased. In conclusion I will make the following prediction: that there never will be a good and permanent improvement made in the production of new varieties, taking into consideration their productiveness, hardiness, health, and longevity, unless one or both parents have a *marked positive character*; quality and beauty may be produced, but they will soon end in disappointment, for they will have to give place to better sorts more congenial to our wants. There is no inherent principle within a plant of a negative character to produce a positive effect.

THE TRUE IDEAL OF GARDENING.

BY A. D. G.

IN discoursing upon the true ideal in gardening, it will be needful, first, to fix certain meets and bounds to our subject. We are not to inquire after the highest conceivable, or even practicable style of horticulture. Else we should copy some of the rural scenes which poets have painted, or go to certain grand estates in foreign lands, and, selecting their best features, construct an establishment as near perfection as is possible to human art. Our aim is humbler than this. It is to consider what is the best style of gardening for the numerous readers of this journal who have small incomes; are able perhaps to keep only one serving man, and expect to do more or less work with their own hands.

It is obvious, on a little reflection, that what is an ideal to one will not be exactly so to another. One will find his highest desires met in a well-ordered *vegetable garden*. To have the earliest asparagus, peas and lettuce; to surprise himself with a dish

of new potatoes on the Fourth of July; to raise goodly squashes for summer and winter; to abound in beets and onions, cauliflowerers and cabbages,—what can be a happier lot than this? The man will doubtless pride himself on the mellowness, depth and richness of his soil, and on the straightness of his walks and rows of vegetables. Not a weed is allowed to steal the forage from his useful plants, or to reflect upon the industry and tidiness of the owner. Hot-beds, hand-glasses, and cold-frames bring forward tender esculents, and protect them from untimely frosts. The striped bug is caught napping; the cut-worm is demoralized with lime, and ants are taken off with poisoned sugars.

And so, as the summer waxes and wanes, bringing its succession of juicy and wholesome products, the proprietor paces up and down his walks with solid satisfaction.—Here, he says, is something substantial. There is no moonshine in these vegetables;

they build up and strengthen the human frame; they add much to the physical comfort of all who eat; they help to support a family. Unlike flowers, which only delight the eye, or feed the fancy, these feed and nourish the body;—are a real, material good;—and what more can mortal man desire?

His neighbor will choose to add a *fruit garden* to his vegetable department. He would not underrate the one, but would superadd the other, and divide his labors between them. Here we shall see well filled ranks of currants, strawberries, raspberries, blackberries, grapes, plums, cherries and pears. The care of these fruits will add somewhat to his labors, but will also improve the character of the grounds. The currant-worm will stop at nothing short of hellebore and copperas. Berries of all sorts must be covered in winter; the grape must be pruned and protected; the pear must be trained and guarded from blight; and, as for the plum and cherry, one must fight in their branches against black knot, bursting bark, birds and the Grand Turk, and then divide a large share of the fruit between them.

Yet a fruit garden brings with it something beside trouble. Its plants, vines and trees are beautiful to look upon, whether in leaf, flower, or fruit. It is a pleasant occupation to train them; to study their several laws of growth, and to observe how genially they respond to skillful culture. They fairly smile their gratitude for your endeavors to heal their diseases, and to promote their health.

The culture of fruit appeals to a higher class of sentiments than the raising of vegetables. It associates us at once with the whole fraternity of pomologists, ancient and modern,—a fraternity respectable and large. To succeed well in growing fruit, one needs to give it his best thoughts and endeavors. As an article of food, it is less simply useful than vegetables, and promotes a more refined gratification. It has been happily styled “the flower of com-

modities.” The modern fondness (we may almost call it the *passion*) for raising seedling fruits is constantly elevating the standard of excellence, and improving the public taste. It is not enough now for a man to produce a strawberry as good as the Wilson, a grape as good as the Isabella, a pear equal to the Bartlett; they must, in some respect, be better. Of the pecuniary profit of fruit raising, we need not speak at length in this place; for every one knows that it yields larger returns for the money and labor expended upon it than any other crop.

It is no wonder, then, that this is to so many the highest style of gardening. It satisfies both the æsthetic and practical demands of their nature. Yet there are other horticulturists who cannot be wholly content with fruit growing. *Flowers* have their devotees, as ardent, if not as numerous as fruits. Doubtless, the majority of floriculturists are not insensible to the solid virtues of tomatoes, onions and pumpkins, nor are they sublimated above the finer relish of peaches, pears and grapes; yet they confess to a heartier love for the products of the flower garden.

This fondness for flowers shows itself in many degrees and forms. Now, it fringes the carrot bed with a row of marigolds and poppies; now it claims a border among the parsnips and melons, where it blooms out in pansies and pinks, asters and dahlias, or it appropriates the well tilled patches of soil around the fruit trees, and covers them with portulacca and Drummond's phlox. At other times, it cuts out hearts and diamonds in the grass, and makes them radiant with verbenas, petunias and geraniums; or, still again, it asks for a more extended tract of ground where it may disport itself on a larger scale, and in all manner of ways.

Woman claims the flower garden as her special province, and here she may insist upon her “rights” without offending the pride of her appointed lord. It is an atmosphere of refinement, purity and tender-

ness. There is no grace of person or character which flowers do not symbolize; no sentiment of the heart which they do not express.

The influence of floriculture upon the health and happiness of those engaged in it is not the least of its claims upon our regard. Very few of its operations are beyond the strength of invalids or ladies; and then, the work is so cheering and so rewarding, it "doeth good like a medicine;" nay, it often brings back health when the potions of the apothecary had been tried in vain.

But this discourse on gardens would be incomplete without some reference to *the pleasure-ground or lawn*. The mere utilitarian sees little to be desired in grass-plats and ornamental trees. He would convert the land so wasted, into a garden of cucumbers, or a potato patch, or an orchard of apples and pears. And some persons have such a passion for flowers, that they would cut up the finest lawn into beds of glittering blossoms. Others hold that a pleasure ground in which flowers are kept subordinate to grass and trees, is of a higher order than one in which floricultural displays are made prominent. In their view, the lawn appeals to a different class of sentiments from those of the flower-garden, or indeed, of any other cultivated ground. It is "nature to advantage dressed." Considered as a work of art, it is the superiority of a well painted landscape over painted flowers or fruits. It speaks of culture and refinement, of elevation above the stern demands of utility, or the gross promptings of appetite. It is expression of repose and calm enjoyment.

But why set one style or department of gardening over against another? Rather would we embrace them all in one view, and so constitute our true ideal; and, in most country towns, where land is plenty and cheap, this can easily be realized. The kitchen garden is a necessity. There is no use in denying that we all like good "garden sauce." It makes up an important

part of our daily food, and promotes largely the comfort and health of every household.

We want fruit also. Less absolutely needful, it yet contributes much to our enjoyment, affording something wholesome and pleasant during nearly every month of the year. (If the fruit garden can expand on one side into an *orchard*, it will be a very useful addition; though this cannot always be expected). And can any one be content without his collection of flowers? No universal rule can be laid down as to their number or style of arrangement. One will choose to set them in little patches, here and there, to enliven the borders of his walks; another will place them, for the most part, in a scene by themselves, separate from fruits and vegetables, and even the lawn. Some of the most desirable plants have only a short-lived inflorescence, and these become withered and unshapely. It is not in good taste to disfigure the highly dressed grass-plot with these.

For ourselves, we prefer to lay off a portion of ground for the flower-garden, somewhat aside from the constantly traversed walks, and to devote it to all kinds of blossoming things. Here we can have the crocus, snow-drop and mezezeon venturing forth amid the ice and snow of March; the later hyacinth and tulip, perennial herbaceous plants, biennials, annuals, roses, the late bulbs and small shrubs; all of them together affording a succession of flowers from April to November. What, if some of them decay, and for a while look a little untidy? Others are coming on to take their places, and so, first and last, will delight the senses and gladden the heart through all the floral year. As we have already intimated, the highest and best feature of our ideal garden is the lawn; on the preparation and keeping of this, we would bestow our chief thought. The grass, the trees and shrubs, the hedges and the walks should be perfect in their arrangement and keeping. To all of this we would add, if practicable, a conservatory and grapery.

If any object to this view of the complete garden because they cannot afford all these things, or have not leisure time to attend to them, we venture to say, that a majority of the readers of this journal *can* afford them, unless it be the seeming luxury of the conservatory and grapery, and this can be dispensed with. But when the means and the time are absolutely wanting, we would say, adjust the size of your grounds accordingly. Construct a smaller garden, if need be, but do not leave out any of its parts. The ideal garden we have now desired to paint, is one which can be managed easily, without undue sacrifice of money or time. It is to be presumed that none of us are parsimonious or indolent! Our ideal garden neither asks nor permits any more labor on the part of its owner than will contribute to his health. When larger than this, it becomes despoiled of its

poetry and sweetness, and falls into the low level of task-work and drudgery. Nor is it enough that we can manage to keep it in order by carefully husbanding our time and strength, and devoting them wholly to its care. Have we not something else, and more important to do? We have social obligations, literary or scientific studies, public, religious and civil duties which require our attention. And the complete garden does not conflict with these. It is a place of recreation and enjoyment, an example of culture, a fountain of inspiration. In that ideal garden sketched by Divine direction, the trees bore twelve manner of fruits, and yielded their fruit every month, and the leaves of the trees were for the healing of the nations. A place of healing and refreshment should our gardens be, for the body and the soul.

NATIVE PLANTS—THEIR CULTIVATION, &c

BY C. N. B.

To those interested in horticulture, we would recommend for the advancement of their gardens, one great and inexhaustible storehouse of beauty, viz: the woods and fields with their wreath of uncultivated blossoms. It is in the power of almost every one to draw from this source, and such is the perversity of our nature, perhaps on this very account, the opportunity is neglected. While various flowers, neither graceful nor fragrant, are admitted into the precinct of a garden, because, perhaps they are rare, of difficult growth or foreign extraction, many a wild native of our own hills and valleys would be altogether denied a place there. This is in bad taste, and the usual plea, "O! they are so common!" is by no means a reasonable or satisfactory objection. Whatever is perfectly beautiful might claim a place, though this would include so immense a collection that, of course, we would recommend a judicious selection from so vast a stock.

We find upon trial many native plants difficult to cultivate; and after a few years they entirely disappear unless special care is bestowed on them. They appear to suffer more from the effect of freezing and thawing in winter, thus injuring the crown of their roots; or being thrown out of the ground by the action of the frost, they are destroyed. They receive some protection, in a natural state, by being, in winter, covered with water, grass, leaves or snow, and should likewise be protected under cultivation, by throwing over them hay, straw, litter or earth.

The names of these comparatively tender plants are the *PLENARY ROOT*, (*Asclepias tuberosa*) with its bright orange colored flowers. It is a rare plant, and we know of none in a wild state in this vicinity. We have noticed it on the sandy plains in the vicinity of Albany and the Irondequit Bay, Lake Ontario, near Rochester. The rich flowering *LIATRIS*, (*scariosa*) with its ra-

came of light purple flowers; its roots a solid tuber and truncated; that is, it has the appearance of its end being bitten or cut off. The popular name of this plant is the *Devil's Bit*. We were informed many years ago by an old root doctor, that it received its appellation in this way: it having come to the knowledge of the great adversary that this plant was useful to mankind, and possessed great medicinal properties, he, in order to show his animosity to our race, bit off the end of the root, thereby depriving it of its most useful properties. Upon doubting the truth of the legend, and observing to him that the roots of some other plants presented the truncated form, "Why, bless me," replied the old man, "don't you see the marks of his teeth?"

The *Liatris* is found growing in a clayey soil on the border of woods. To this family we are indebted for many of our autumn ornaments in our flower garden borders. They are deciduous herbaceous plants, propagated by division and flourishing in common garden soil. Fine specimens of this plant can easily be obtained by seedlings. The splendid CARDINAL FLOWER LOBELIA, (*cardinalis*) when once introduced into a garden will propagate itself, if the soil is congenial, by its seeds, and produce some fine plants.

THE INDIAN TURNIP, (*arum*) with its singular flower, variegated inside with stripes of pale green or brown. In autumn the plant presents its branches of shining scarlet berries.

THE SOAP WORT GENTIAN is a handsome autumnal plant, with blue fringed flowers. The several species of the *Orchis*, particularly Frimbrated, and the Grandiflora, both elegant plants, and to be found in swamps.

There is another class of native plants that require no particular care, but when once introduced into the garden, continue to grow and thrive for many years. The names of some of these are the ASTERS, some of which can be made to grow to the height of ten feet, and bearing upon its spreading top several hundred flowers.

The GOLDEN RODS,—(*Solidago*)—many of them coarse but showy plants, all yellow flowered. Propagated by division of the plant in spring; showy at the back of herbaceous borders, or the back rows of herbaceous plants in the front of the shrub-beries.

The SIDE-SADDLE FLOWER, (*Saracena*) by taking up in the fall, with the wet moss or sphagnum attached to its roots, put into water and cultivated like the hyacinth and placed on a parlor window, it will flourish and show its curious flowers towards spring. It is a half hardy perennial. Division in spring; fibry peat and chopped sphagnum. There are three varieties, purple, yellow and green.

How often in gardens have we seen the coarse and common Althea, or the more common Lilac towering in pride and usurping a place which might have been filled by a cluster of LAUREL, (*Kalma latifolia*) with its clusters of rosy blossoms, or even by a specimen of the magnolia, with its white glittering flowers and its delicious perfume scenting the whole garden. We have heard it advanced particularly by foreigners, that our wild flowers have no fragrance; but let any one ride along the skirts of a wood, on a calm spring morning or evening and judge for himself. Nothing can exceed their delicate odor, and we have often discovered their hiding places by this tell-tale charm.

From the meadow, from the wood, from the gurgling stream, many a wild native flower has been transplanted to a genial soil beneath the homestead's sheltering wing, and yielded a dainty offering to the household gods, by the hands of those fair priestesses who have now become their ministers. By the planting of a few trees and shrubs and flowers and climbing plants around that once bare and uninteresting house, it has become a tasteful residence, and its money value more than doubled. A cultivated taste displays itself in a thousand forms, and at every touch of its hand gives beauty and value to property.

A judicious taste, so far from plunging its possessor into expense makes money for him.

The eye of the lover of nature is always filled with beautiful and picturesque objects. His ear soon becomes familiar with the light carol of every bird which inhabits

the thicket or the forest; and his eye is soon made acquainted with the whole lovely family of flowers which enamel the earth and enrich the air with their wide scattered perfume.

Pokeepsie, 1865.

NOTES ON THE SEPTEMBER NUMBER.

NATURAL AGENTS OF VEGETATION.

PRACTICAL theory of vegetation is a knowledge so rare that I rejoice you are giving from time to time more or less of it. Every grower of tree or plant, and indeed every one, whether they be growers or merely admirers of flowers and plants, but as yet engaged in the "sugar and the cotton trade," should have knowledge of the action of the elements, air, light, water, etc., in order to fully understand the creations of the earth as set before him. To this knowledge, combined with practice, our best gardeners can only ascribe their successes over those of men who follow a practice to which they have been educated, without thought of its why and wherefrom.

ON GATEWAYS.

The writer has well hit off our want of appreciation of approach gateways. Like him I do not think all crooked things are curved lines or lines or emblems of beauty; but as entrance gates to most of our country residences, I would sooner trust for good effect to the handling of their proprietors, in forming gates from the oaks and elms of their forest grounds, than the plane and rule of the common carpenter. Rarely will the same style of gate in all its adornings or forms suit two places,—the entrance from the house, the width of the approach road, the angle at which it starts from the main or public road, and many other points are to be counted in forming a gateway.

Among other gateways, that of the agricultural, made from various tools, as the hoe, rake, spade, etc., is occasionally effective where the buildings and grounds have

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methodical characters of the well-to-do and systematic farmer.

To many of our country houses, the covered gateway, as well as the covered carriage porch or *porte cochere*, are items that will add much of comfort as well as beauty. I trust this article will be continued and illustrated fully.

OUR NATIVE CLIMBERS.

Another article in the right direction. It may be, the writer occasionally describes a little wide of the mark, but he is causing others to think and look and cultivate. As he says, much of beauty may be added to our country houses, by the addition of a few of our native climbers, really requiring little of expense, except the time and labor of planting. One thing, however, I have found in many years of practice, and that is, it is cheaper to buy of the nurserymen, the few plants wanted, than expend the time, wear and tear of horse and wagon in seeking them from out the fence, corners, etc. Only when you go to buy of the dealers, buy what you want, and not what he has to sell; in other words, stick to the native plant, rather than buy some *new* climber that the dealer may advise.

HARVEST HOME.

It is pleasant to read of the heartfelt rejoicings, of earlier designs of this earth, over the bounties the good God bestowed, but beyond that of reading there is nothing. In our country all the rejoicing lays in the amount of dollars obtained on the market stand, and nearly all our holidays are practically made days of usefulness in finishing up some light and not pressing business.

We have, really and truly, as a people, no such thing as days or weeks of true heart-felt rejoicings for the manifold blessings daily bestowed upon us by the Almighty—would it were otherwise.

CURIOSITIES OF VEGETATION.

Like its predecessors, full of information. Let them be continued.

THE MELON.

Historically practical, but some of its deductions may perhaps be questioned. In the middle Southern States, Tennessee, etc., the melon is so very easily grown, and to such size, while at the same time it retains its flavor, that it not unfrequently forms a great part of the food during the period of summer's greatest heat. Rarely as it is treated of in our journals, we find that around nearly all of our cities and large towns, even as far north as Hartford, in Connecticut, it is one of the most profitable of annual crops. Many growers realizing from three to five hundred dollars per acre for their sales.

Some years since, two or three *new named* sorts of watermelons were sent out, one under name of Bradford, the other name I now forget. Pray let us know, how, in their cultivation, they have compared with the "Apple Seeded" or Imperial for delicacy, or the Mountain Sprout for size and flavor. Of the citron or musk melon family, I have never found any equal to one named Skillman's fine netted, but latterly all the seed I get of it is impure.

TRUFFLES.

First let us quote: "One has to be educated in order to appreciate talent." So I think I should require to be educated in order to relish truffles, perhaps not, for I do love mushrooms when well cooked, and yet,—underground fungi we occasionally find, especially in light soils, where old roots of trees have been left to decay undisturbed; but whether they belong to what is termed food for man, we confess we have never investigated.

HYBRIDIZING GLADIOLI.

A practical account of the course of hybridizing, but nothing new. One item is here told, however, of which we wish to make a note. It is that from a large bed of seedlings, only one or two are selected as desirable; the balance are placed among what are termed mixed sorts and *sold*.

Thus we have told us the origin of so much trash, under name of gladioli, yearly to be found in gardens and purchased at plant stores. Let us hope the time will be when public taste shall discountenance every dealer, who, for dollars and cents, assist to detract and dishearten the labors and beauties of floriculture.

The lovers of gladioli should visit some of the gardens around Boston, or Springfield in Massachusetts, or Newburgh, New-York and Brooklyn, where they may see large beds of the most beautiful sorts, as Penelope, Aristotle, &c., &c. It is a beautiful and easily cultivated flower, and should be in every garden, but only in its best forms.

ACTION OF METALLIC SALTS.

With Dr. Dake, I like to see and read of experiments, and would suggest that he take up and experiment, for he is reported to have both the ability of brains and the time and pecuniary means at control.

I shall rejoice when our fungus or sporidia is shown to affect only plants (as I now believe) that are unhealthy, from some cause, either by artificial practice or otherwise. Horticulturists yearly expend thousands in empirical practices to remedy or prevent diseases, of which they literally know nothing.

REPORT ON GRAPES.

Thanks for this record. In premises taken, 1st, 2d, &c., I mainly coincide, but all do not hold. I have this, as years before, found rot and mildew on old and young vines, cultivated and uncultivated, pruned and unpruned, but as a rule on which to base premises, have found less of rot or mildew on young and healthy *unpruned*

summer vines, than on those older or even of same age, but which had been *scientifically* amputated from year to year. My observations have been made in the States of New York, Ohio, Pennsylvania, Illinois, and Missouri.

A few days since, while in the humor for research, I looked back at records and teachings of *our best* grape men of twenty-five years ago, and amused myself at the thought of some of them, at least, having practised very different from the teaching of their writings.

EDITOR'S TABLE.

You may see, Messrs. Editors, that I have no business here, but as it is often that the cream of your journal is gathered, and that here are items not elsewhere found, excuse me, if I for once call in and

ask Mr. Williams to write us an account of Kittatinny blackberry, its origin, habit, time of maturing, form of berry, color of stem, thorns, &c., &c.

Mr. Nicholson's cherry, ripe 17th July, is not according to the books or my knowledge. A late cherry,—Hildersheim,—is later. Belle Magnifique sometimes ripens in July, and all along until September, and young and vigorous trees, we all know, do not mature their fruit as early as trees of more age. The statement that the kind is ten days later than any in his vicinity does not augur well for the old cherry region of Ohio; besides, I have so high an opinion of Dr. Kirtland's judgment on such matters, that I look on his remark as one not intended to stand out in print.

REUBEN.

CULTURE OF THE ROSE.

BY FRANCIS PARKMAN.

(Continued.)

CUTTINGS.

All roses may be propagated by cuttings, but some kinds strike root much more readily than others. The hard-wooded roses, including the entire family of the Hardy June roses, and especially the mosses, are increased with difficulty by cuttings. The Hybrid Perpetuals root more readily, while the tender ever-blooming roses, including the Teas, Noisettes and Chinas, are propagated in this way with great ease.

Cuttings may be made from the ripened or the half ripened wood. In the case of roses, and of nearly all ligneous plants, cuttings made from the ripe wood do not require bottom-heat, and are more likely to be injured than benefited by it. On the other hand, cuttings of the soft or unripe wood strike root with more quickness and certainty if stimulated by the application of a gentle heat from below.

In propagating roses from the ripe wood,

the cuttings must be made early in autumn from wood of the same season's growth. The chances of success will be increased if they are taken off close to the old wood with what is called a "heel," that is, with a very small portion of the old wood attached. The heel should be trimmed smooth with a sharp knife; the cuttings may be six or eight inches long. Strip off any leaves which may still adhere to them and plant them in rows at a depth of about five inches in a cold frame. The soil should be very light and thoroughly drained; water, to settle it around the cuttings. On the approach of frost they should be protected with boards and mats, giving them air on fine days during winter. In the spring a white cellular growth called a "callus" will have formed at the heel of each cutting, which, if the process succeeds, will soon emit roots and become a plant.

Propagation in summer from the half

ripe wood is a better and less uncertain method. In June and July, immediately after the blossoms wither and before the rose has begun its second growth, cuttings should be made of the flower stems. Each cutting may contain two or three buds. The lower leaves must be taken off, but the upper leaves must remain. Trim off the stem smoothly with a sharp knife below the lowest bud and as near to it as possible without injuring it.

If the cuttings are taken off with a heel, as above described, the chance of success will be greater. They may now be inserted at the depth of an inch and a half around the edge of a small pot filled one-third with broken crocks and the remainder with a mixture of loam, leaf-mould and sharp sand. Now place them in a frame on the shady side of a hedge or fence, water them to settle the soil, and cover them closely with glass. Sprinkle them lightly every morning and night, and when moisture gathers on the inner surface of the glass, turn it over, placing the dry side inward. If mould or decay attacks the cuttings, wedge up the glass a little to give them air. In a week or two they will form a callus, after which they may be removed to a gentle hot-bed, kept moderately close and shaded from the direct sun. Here they will quickly strike root and may be potted off singly into small pots.

Another mode of propagation, and a favorite one with nurserymen, is practised early in the spring. In this case, the cuttings are made from forced roses, or roses grown on green-house rafters. Some propagators prefer the wood in a very soft state, cutting it even before the flowers are expanded. The cuttings may be placed in pots, as in the former case, or in shallow boxes or earthen pans, thoroughly drained with broken crocks. The soil should be shallow enough to allow the heel of the cutting to touch the crocks. They are to be placed at once on a moderate bottom heat, covered closely with glass and shaded from the direct rays of the noontide sun. Their subsequent treatment is similar to that of summer cuttings.

They must be closely watched, and those that show signs of mould or decay, at once removed.

After the callus is formed they will bear more air. When rooted they should be potted into small pots and placed on a hot-bed of which the heat is on the decline. Towards the end of May, when the earth is warmed by the sun, they may be turned out of the pots into the open ground where they will soon make strong plants.

Many American nurserymen strike rose-cuttings in spring, in pure sand over a hot-bed or a tank of hot water in the close air of the propagating house. They must be potted immediately on rooting, as the sand supplies them with nothing to subsist on. We have seen many hundreds rooted in this way with scarcely a single failure.

The management of difficult cuttings requires a certain tact only to be gained by practise and observation, and the gardener who succeeds in rooting a pot of cuttings of the Moss rose, has some reason to be proud of his success.

BUDDING.

This mode of propagation is attended with great advantages and great evils. A new or rare rose may be increased by it more rapidly and surely than by any other means; while roses of feeble growth on their own roots will often grow and bloom vigorously when budded on a strong and congenial stock. On the other hand, the very existence of a budded rose is, in our severe climate, precarious. A hard winter may kill it down to the point of inoculation, and it is then lost past recovery; whereas, a rose on its own roots may be killed to the level of the earth, and yet throw up vigorous shoots in the spring. Moreover, a budded rose requires more attention than the cultivator is always willing to bestow on it. An ill-informed or careless amateur will suffer shoots to grow from the roots or stem of the stock; and, as these are always vigorous, they engross all the nourishment and leave the budded rose to dwindle or die, while its disappointed owner, ignorant of

the true condition of things, often congratulates himself on the prosperous growth of his plant. At length he is undeceived by the opening of the buds and the appearance of a host of insignificant single roses in the place of the Giant of Battles or General Jacqueminot.

Budding, however, cannot be dispensed with, since, in losing it, we should lose the most effectual means of increasing and distributing the choicest roses. The process consists in implanting, as it were, an undeveloped leaf-bud of the variety we wish to increase, in the bark and wood of some other species of rose. The latter is called the stock, and it should be of a hardy and vigorous nature. Two conditions are essential to the process. The first is that the bark of the stock will "slip," in other words, separate freely from the wood. The second is, that the rose to be increased should be furnished with young and sound leaf-buds in a dormant state. These conditions are best answered in summer and early autumn, from the first of July to the middle of September. During the whole of this period, the sap being in active motion, the bark separates freely from the wood; while there is always a supply of plump and healthy buds on shoots of the same year's growth. The only implement necessary is a budding-knife. The operator should also provide himself with strings of bass matting, moistened to make them pliant. Instead of the bass, cotton wicking is occasionally used. Cut well ripened shoots of the variety to be increased, provided with plump and healthy buds. In order to prevent exhaustion by evaporation from the surface of the leaves, these should be at once cut off, leaving, however, about half an inch of the leaf-stalk still attached to the stem. Insert the knife in the bark of the stem half an inch above a bud, and then pass it smoothly downward to the distance of half an inch below the bud, thus removing the latter with a strip of bark attached. A small portion of the wood will also adhere. This may be removed, though this is not necessary, and is attended with

some little risk of pulling out with it the eye or vital part of the bud. Now place the bud between the lips while you take the next step of the process. This consists in cutting a vertical slit in the bark of the stock. This done, cut a transverse slit across the top of the vertical one. Both should be quite through the bark to the wood below; then, with the flat handle of the budding-knife, raise the corners of the bark and disengage it from the wood sufficiently to allow of the bud being slipped smoothly into the crevice between the wood and bark of the stock. Next, apply the edge of the knife to the protruding end of the bark attached to the bud and cut it smoothly off immediately over the transverse slit in the bark of the stock. The bud is now adjusted accurately in its place, the overlapping bark closing neatly around it. Now tie it above and below pretty firmly with repeated turns of the bass matting, and the work is done. It must be remembered that to be well done it must be quickly done, and it is better to insert the bud on the north or shady side of the stock.

The bud and the stock will soon begin to grow together. After a week or two they should be examined and the tie loosened. If the bud is put in early in the season it may be made to grow almost immediately, by cutting off the ends of the growing shoots of the stock, and thus forcing sap towards the bud. As the bud grows the stock should be still further shortened and all the shoots growing below the bud should be removed altogether.

Budded stocks require in this country, at least when the buds are dormant, a protection against the winter. Where there are but few, oiled paper or something of a similar nature may be tied over the bud as a shelter from snow, rain and sun; but when there are many this is impossible, and the stocks may be taken up and "heeled" close together in a dry soil under a shelter of boards and mats. "Heeling" is merely a temporary planting.

In the following spring, the stocks may

be cut off to within an inch of the bud and then planted where they are to remain. When the bud is inserted near the ground,—which in our climate should always be done—the stock should be planted in such a manner that the bud is a little below the level of the earth. To this end the stock should be set in a slanting position in the hole dug for it, the bud, of course, being uppermost, and about an inch below the level of the edge of the hole; then the hole should be partially filled in. When the bud has grown out to the height of six or eight inches, the hole may be filled altogether. No part of the stock will now be seen above the earth. By this means the point of junction of the stock and the bud is protected from the cold of winter and the heat of summer, and the rose will live longer and thrive better than where the stock is exposed. In many cases the rose will throw out roots of its own above its junction with the stock, and thus become in time a self-rooted plant.

There are two kinds of stocks in common use at the present time for out door roses. One is the Dog rose, a variety growing wild in various parts of Europe; the other is the Manetti rose, a seedling raised by the Italian cultivator, whose name it bears. There can be no doubt that, of the two, the Manetti is by far the better for this climate. It is very vigorous, very hardy, easily increased by layers or cuttings of the ripe wood, and free from the vicious habit of the Dog rose of throwing out long underground suckers. We by no means mean to say that it will not throw up an abundance of shoots from the roots if allowed to do so, but these shoots are easily distinguished by a practiced eye from those of the budded rose. They may be known at a glance by the peculiar reddish tint of the stem, and by the shape and the deep glossy hue of the leaves. They must be removed as soon as seen, not by cutting them off, but by tearing them off under ground, either by hand if possible, or with the help of a forked stick, which, pressed strongly into the earth, slips them off at their junction with

the root. In this manner all the dormant buds ready to grow about their bases are effectually removed.

It cannot be denied that many kinds of roses, budded low on the Manetti stock, will grow with a vigor, and bloom with a splendor which they do not reach on their own roots, and which will often repay the additional labor which they exact. We once planted in the manner above described, a strong Manetti stock containing a single bud of the hybrid perpetual rose—*Triomphe de l'Exposition*. In the September following, it had thrown up a stem with several branches, the central shoot rising to the height of six feet and a half, and bearing on its top the largest and finest blossom we have ever seen of that superb variety. Some roses, however, will not grow well on the Manetti. Others, again, can scarcely be grown with advantage in any other way, refusing to strike root from layers, and often failing when the attempt is made to root them from cuttings, even of the soft wood. Some, even when rooted, remain feeble and dwarfish plants, while, if a bud from them is implanted in a good Manetti stock, it would grow to a vigorous bush in one season. To sum up, we would say, that, for the amateur, nine roses out of ten are better on their own roots, while there are a few which can only be grown successfully budded on a good stock.

GRAFTING.

All the evil that can be spoken of budded roses is doubly true of grafted roses; while the advantages which the former can claim are possessed in a less degree by the latter. The reason is, simply, that in the case of the budded rose, the junction between the stock and foreign variety is commonly more perfect than in the case of the grafted rose. Indeed it would not be worth while to graft roses at all, were it not for the fact that grafting can be practised at times when budding is impossible. This is because it is indispensable in budding that the sap of the stock should be in full motion, whereas in grafting it may be at rest.

There are innumerable modes of grafting, but for the rose the simplest form of what is called "whip grafting" is perhaps the best. In the end of winter or at the beginning of spring, take young, well rooted plants of the Manetti stock, having stems not much larger than a quill. Beginning very near the root, shave off with a sharp knife a slip of the bark with a little of the wood, to the length of something more than an inch; then shave down the lower end of the graft until it fits accurately the part of the stock whence the bark and wood have been pared off. The essential point is that the inner bark of the graft should be in contact with the inner bark of the stock. When the two are fitted, bind them around with strings of wet bass matting; now, plant the stock in a pot, setting it so deeply that its point of junction with the graft is completely covered with soil. Place the pots thus prepared on a gentle hot-bed and cover them closely. When the shoots from the graft are well grown out, give them air by degrees to harden them.

A better way is to pot the stocks early in autumn, so that they may become well established. In this case, it will be necessary to cover the junction of the stock and graft with grafting-wax or clay, in such a manner as to exclude all air; then plunge

the pots in old tan over a gentle hot-bed so deeply that the grafted part is completely covered, the ends only of the grafts being visible. This keeps them in an equable heat and moisture. The subsequent treatment is the same as in the former case. As the stock has acquired a hold on the earth of the pot, or is, as the gardeners express it, "established," the graft will grow much more quickly, and make a strong blooming plant the same season.

In all grafting, whether of roses or other woody plants, it is necessary that the buds of the graft should be completely dormant. In the stock, on the other hand, a slight and partial awakening of the vital action at the time the graft is put on, seems rather beneficial than injurious.

SUCKERS.

In this mode of increasing roses, nature, rather than the cultivator, may be said to do the work of propagation. Many sorts of roses throw out spontaneously long underground stems, from which roots soon issue, and which soon throw up an abundance of shoots above ground. When these suckers, as they are called, are separated from the parent and planted apart, they make a strong growth, but rarely form plants so symmetrical as those raised from cuttings or layers.

LEVEN'S HALL, LANCASHIRE.

This is the seat of the Hon. Mrs. Howard, about five miles south of Kendal,—a venerable mansion in the Elizabethan style, buried among lofty trees. The Park, through which the river Kent runs, abounds in majestic trees, is of considerable size, well stocked with deer, and more sylvan in its character, except perhaps Gowbarrow Park, or Ulswater, than any we have yet seen. In fact, I constantly expected to come upon the "Melancholy Jacques" in some of these woodland glades overhung with mossy rocks and luxuriant ferns.

Among other fine features of the park, is a superb avenue of Beeches, I should say

quite a mile long, and three or four centuries old. The gardens, however, form the greatest attraction, being laid out in the old French style, and are, perhaps, unique examples of this old topiary work in the kingdom. They were laid out by Mr. Beaumont, gardener to James II, and the correspondence between Beaumont and the then gardener of the place is still preserved in the Hall, and is a very curious specimen of the extraordinary spelling of that period. Trim alleys, bowling greens and wildernesses, of Beech abound, the hedges being about 12 feet high, and the arches 18, all of Beech, but clipt as close and smooth as

a wall. The bowling green is 80 feet square, surrounded on the four sides by Beech walls about the same height as the alleys, (12 feet) with a single arch 18 feet high in centre of each square or side.

The grass in the bowling green, as well as in the alleys, was laid 250 years ago on slate slabs or pavement 6 inches below the surface,—which pavement was laid with rule and compass, so as to be as level as a Billiard table—over this was put the sod. Nothing could be more level or smoother; but it abounded (as all English lawns I have yet seen do) with daisy and plantain.

From the bowling green through the alleys, 15 feet wide,—you walk over this sod—passing through a succession of these beautifully formed and closely clipped arches to the Topiary garden, where you suddenly come upon a succession of Yew, Golden and Silver Holly and Box, cut into the most extraordinary and fantastic shapes. There being, for instance, half dozen Box trees cut into Queen Elizabeth and her maids of honor.

One tree is cut into an arbor—sufficiently large to hold half a dozen persons—with two smaller arbors cut in the rear of the larger one, so ingeniously and artfully concealed, that persons sitting there may be entirely out of sight, and yet within a few inches of the other seats. This, it is supposed, was intended for the occasional occupation of spies, either in love or war.

There are two golden hollies cut into the shape of goblets 20 feet high; many in the shape of gigantic vases with handles. One silver holly, a perfect pillar 30 feet high; this has to be clipped by a staging.

The wonder is, that these trees should so well preserve their shape, character, closeness and verdure, after having been cut for over two centuries. It requires five men six weeks to go over them. The gardener looks almost as old as the trees. There was one old fellow clipping the ruff of Queen Elizabeth, who had annually cut it for 50 years. Several more had been 30 and 40 years in the garden. The head

gardener, who had just died, had been gardener 70 years; though for the last 20 years he had not done much, they said, but walk about trimming a little here and there. Every clipper is accompanied by a man with a stiff broom or brush to sweep off the cuttings.

As wonderful as the gardens are, they are not more extraordinary than the old Hall, which contains some exquisite specimens of elaborately carved work. Christabel says of it:

"The chambers, carved so curiously;
"Carved with figures strange and sweet;
"All made out of the carver's brain."

From a paved court you enter into a fine old servant's hall, in oak, with an immense fire place 6 or 8 feet wide, and "1582" over it; long tables with benches round the four sides, now used by the servants and retainers as of yore; above this a regular Baronial hall, hung in old stamped leather, the walls covered with armor, boar spears, hunting saddles; an oak floor, with a square of Turkey carpet; the windows, (square bays) in small diamond and hexagon figures set in delicate lead lines and exquisitely emblazoned.

One corner of the great hall, under the grand stairway was a chapel; but on occasions of State, a large tapestried curtain was dropped over this, converting the hall into a great banqueting room.

This opened by an ascent of three steps into the drawing room, so beautifully carved in wood, that, at present price of labor, it is estimated the same work would now cost £3,000. Exquisite square bay windows, with the most delicate figures and settings, emblazoned like the hall, with armorial bearings, tapestried chairs, tables, etc. One of the deep bays (almost a room in itself) looking out on the quaint garden, the other on the Park; this also hung in embossed and gilded leather. From this, by three steps again, you ascend into the Library, equally wonderful from its carvings in oak and hangings in leather.

An upper hall is hung in superb tapestry,

representing a story from an Italian poem. Several concealed rooms lead from this to corridors, upon which the chambers open. One, the State room, being more gorgeous than the rest; the color of the hangings being scarlet and gold embossed leather. The dining room, morning room, and little library being more or less of the same quaint style, and every thing being as well preserved as in the time of King James. It only requires a few Lords and ladies in the costume of that period to make the delusion complete.

There is a very extraordinary custom peculiar to this place, called the feast of the

radishes, on the 12th of May. The Mayor and Corporation of Kendall, as well as all strangers, and the people of the neighborhood for miles around, assemble in the court yard, and drink "*morocco*," and eat radishes and bread and butter. The "*morocco*" is an ale 20 years old, so strong and powerful, that a single pint will quite overpower any body.

The first time one drinks *morocco*, he must stand on one foot and drink—"success to Levens Hall as long as the river Kent runs."

H. W. S.

GRAPE CUTTINGS FROM HISTORY.—No. V.

BY JOHN S. REID.

WHEN we examine the map of Europe, and study the geographical situation and geological formation we will not be surprised at the extensive range which the grape vine enjoys on that Continent.

Commencing at the parallel of 36° North on longitude 26° East from Greenwich, and sweeping along the northern shores of the Mediterranean to the Straits of Gibraltar—thence rounding up the western shore of Portugal, we can trace the cultivation of the wine grape to latitude 49° north in France, and to latitude 50° north in Germany, being several degrees farther north than it is found in Asia, where 44° is its northern limit; it being said that the temperature of Pekin, in China, in latitude 40° is as cold in winter, as it is at St. Petersburg, in Europe, whose latitude is about 60°.

Again, the Western shores of Europe are much warmer than the Eastern, caused chiefly by the difference between the ruling winds. In the West and South-west, the Equatorial current of the atmosphere deflected from its normal course is the predominant wind, and this current continues eastward as far as St. Petersburg; so that

when we compare the main temperature of the several countries on that continent, with some on Asia, Africa, and America, we will become satisfied, why the wine grape grows and flourishes there, and not with us.

For instance, England enjoys in latitude 52° north, a mean temperature in Winter of 39° against that of 61° for Summer.

France in latitude 47° north, has in Winter 44° against 71° in Summer.

Spain and Portugal each has in Winter 46° against 73°. Germany 38° against 65° in Summer. Egypt has 50° in Winter against 75° in Summer; whilst Canada has a temperature in Winter of 21° against 71° in Summer, and the middle portion of the United States has 27° in Winter against 73° in Summer.

Now if we take Spain and Portugal as the standard, where the wine grape flourishes in all its perfection, then, we have a variation only of 27° from Winter to Summer, whilst in America we have a variation of 46°,—a change so great, that the *vitis vinifera* cannot stand; and hence the failure to cultivate this species successfully with us.

But if we want in Europe, a country where with proper cultivation the wine grape will grow and yield in abundance its luscious nectar, let us take the northern and western shores of the great sea, along the islands, and volcanic slopes of Italy, where the ancients used to obtain the rich Falernian and Setinum wines. Taking the Campania Felix of ancient Rome, as the cradle, or nursery of the Italian wine grape, which may be placed in latitude 36°, we here find the most luscious, as well as the most delicate of wines; for no wine has ever acquired a greater or more extensive celebrity than the Falernian, or more truly merited the name of immortal.

Of all of the ancient wines *it* is best known, and its fame will descend through all future ages, so long as the great masters of the Lyre who have so gloriously sang its praises, are esteemed and admired. Yet its name only lives in song, the famous vineyards of Sinuessa of Massicum and Methymna are now no more; the "juga" and the "fumarium" are now no longer in use; the vines *now* ramble on the ground, or climb the smaller trees for support; whilst in the manufacture and manipulation of the wine, less care and pains are taken than is found among the Arabs.

But it is to the palmy days of Caesar and Augustus, that we look for the production of wine, when Virgil, and Horace, and Martial, and Juvenal and other great masters of song flourished. When Pliny loved to rise with the morning, and shake the dew from the purple clusters which crowned the fields and hills of Massicus; or wander in the evening sun-set along the Falernian plain, and "from Arvisian cups rich nectar drink, and sweet Methymna to Falernus yield;" these were the days of the glory of the Vine, when her juice was esteemed as fit for the entertainment of the gods; and kings and warriors loved to sing its praise.

But let us examine a little the geology of Europe and learn how this formation inures to the growth and benefit of the wine grape.

The Ural mountains serve as a boundary between Europe and Asia; the great plane of the continent occupies its eastern part, commencing at the 26° meridian east from Greenwich; west of this, the plane narrows to the south by the Carpathian mountains.

To the north lies the system called the Scandinavian mountains—and to the south what may be termed the European.

The deductions of geological science, respecting the formation of Europe, seem to be admitted, that the Scandinavian range belong to the first rank as to age as well as extent; and that they consist almost of primary rocks, whilst on their flanks lie horizontal and undisturbed the oldest deposited strata, containing in their fossils, proofs of nature's age, subsequent to their upheaval.

During the formation of the Tertiary strata, nearly three-fourths of Europe were under water, and continued so until the rising of the Pyranees made her a continent; when a great physical change occurred, rising with them the chalk and earlier tertiary formations, consisting of beds of clay, sand, gravel, marls and limestones, containing organic remains.

The Appenines which may be termed a branch of the Alps, constitute the central ridge of the Italian peninsula, extending in a chain of nearly six hundred miles, the highest point of which is Monte Corno, in lat. 42° north. Here the prevalent and characteristic rock is a primitive limestone with fossils; whilst the Euganean hills near Padua; the Albanian hills near Rome; Vesuvius at Naples, and indeed the whole Italian peninsula contain numerous groups of igneous rocks of volcanic origin, such as those of Radicofane, Viterbo, and the Campagna de Roma.

But Europe enjoys the advantage of lying almost within the temperate zone, being in appearance a large peninsula with numerous sub-peninsulas, forming a mixture of sea and land, which tend to diffuse over the latter, the agreeable temperature of the Ocean, so that the heat and moisture of the

Equatorial regions are continually flowing into the atmosphere of that continent.

The peninsulas of Spain, Italy, and Greece, all feel the effect of this Equatorial current, and have little or no rain in Summer or Autumn, which makes them favorable to the growth and fructification of the Vine, the Olive and Orange.

But the *Vitis Vinifera* flourishes most on the south-western coast of that delightful country to which, from its extraordinary fertility and balmy climate, the name of *Campania Felix* was given; and from this district chiefly, the ancient Romans obtained those wines so celebrated and so highly valued, although at the present day it is a matter of no small difficulty to designate any particular vineyard, or spot, where these world-renowned wines were produced, for the sword of the invader has ploughed up their vineyards as with a plough-share, and the foot of the barbarians has trodden down their wine-presses, that desolation may be seen stamped on the face of their land.

Some of the ancient writers speak of *Falernum* and *Massicum* as hills; while others denominate them as fields, or planes; the better opinion is that *Massicus* was the name of the hills rising from the *Falernian* plains, and that the choicest vintages grew on the southern slopes of the adjacent mountains, the *Rocca di Men-drone* being supposed by many to be the ancient *Sinuessa*.

The soil of these vineyards was chiefly calcareous rocks, mixed with the pomace and broken lava of the early volcanic hills, which is said to produce the best wines.

A sandy soil produces a fine pure wine; gravelly and stony soil a delicate wine; rotten and broken rocks, a fummy generous wine of a superior quality. The most advantageous position for a vineyard is that of a gentle southern slope, or side of a hill inclining to the east and south, on which the rays of the sun continue the longest, and hills in the neighborhoods of large rivers, lakes and the ocean ought to be preferred.

The *Massicum* and *Falernian* vines were trained on small poles and frames, not unlike our trellis, called "*juga*" whilst in some of the vineyards they were planted along with small trees on which they were allowed to run; but with the culture of the grape, so was the quality of the wine. Augustus, and the connoisseurs of his time, gave the preference to the *Setine* wine, grown in the vineyards above the *Appii Forum*, over that of the *Cecuban* which came from *Aurycula*.

The *Setine* is reported to be a light delicate wine of choice quality, whilst the *Cecuban* was the favorite wine of Horace, which required age to ripen, it being a strong and generous wine. The *Falernian* is supposed to resemble our Sherry and *Madeira*.

There is another class of wines of good quality, obtained from the island of Sicily, the best of which is from the Province of *Mascoli*, grown on *Etna*; and the red *Mus-dine* of *Syracuse*—*Messina* and *Marsala* furnish the chief wines for exportation—not unlike the second class *Madeira*, but with greater body, whilst the wine of *Hugata* have a strong flavor of violets, and is very agreeable.

The *Lipari* Islands produce some wine of the ordinary quality. The *Malmsey* grown on the volcano of *Stromboli*, is very excellent, and held in much esteem.

Elba, once the temporary prison of the great Napoleon, produces a red wine of superior quality; one hundred vines will make from twelve to fourteen barrels, which improves with age; some of this kind has been known to be one hundred and fifty years old.

All along the southern slope of the *Apennines* the vine flourishes and produces most abundant crops, so much so, that our choicest grapes sink into insignificance before them, both in yield and quality. Here, the vines are planted chiefly terrace fashion, but small attention is given to the pruning, and assorting of the grapes, and, consequently, the wines neither have the strength

nor aroma, which otherwise they would have.

We have, perhaps, taken up more space in the present "Cuttings" than is proper, but we found that we were approaching, if not on sacred, classic ground, where history details more fully the cultivation of the vine, and the manufacture of wine; and all along the range of the mountain slopes of this glorious peninsula, to the eye of the traveler, the scene is but one vineyard; but Tuscany, Naples, and Sicily takes the first rank, and their wines command the highest prices, and have ever done, in the markets of the world.

HOME CUTTINGS.

We feel much obliged to "Reuben" for his criticism on the June number, and notice of our worthy self; but thought that "our irony" in regard to the obtaining "a new seedling" would have been understood. We have been much victimized in the grape line, and feel a little wolfish, when we read of another "new grape" having been produced, as a hybrid, between "Hamburg and Peter Funk," superior to anything known to the trade—price, single eyes, extra quality, ready for bearing, \$5!!

I planted, last season, in one line, five feet apart each, one Delaware, one Adirondac, one Iona,—the Delaware and Iona, cost me \$1 50 each; the Adirondac \$5. They were all covered during the Winter, and opened or uncovered in Spring at the same time; each one was injured more or less by the frost of May last,—I think about equally.

The Delaware has recovered fully; the Iona has been attacked slightly with mildew, and looks a little sickly; the Adirondac mildewed badly, and I fear will not recover. So much for the power of endurance and recovery of these three much lauded grape vines.

This season, each one is three years old and should have made wood for fruit, for the next year:—the Delaware will, the Iona may, but I fear the Adirondac will not. When I covered them in the fall, they seemed equal in size and strength, and so appeared in the spring.

My Catawba crop is a complete failure. What with the mildew and rot, they will not be worth the expense of gathering.

Fayette County, Ind.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

THE GARDENER'S MONTHLY AND THE HORTICULTURIST. — SPECIAL NOTICE TO ADVERTISERS. — Among the large list of advertisers who have seen fit to bestow their patronage on us for the year now closing, three object to our prices, on the ground that the "*Gardener's Monthly*" do the same business for half the money. If all will turn to our January number, 1865, they will find a notice calling attention to the fact, that our charges per page

for advertising are now and always have been considerably higher than the *Gardener's Monthly* or *Hovey's Magazine*. In adjusting our prices, we have not been governed by prices charged in other cities, but have made them such as will pay us a fair, reasonable profit for the services we render. Now, so far as the *Gardener's Monthly* is concerned, we believe it to be a first rate advertising medium; we advertise in it, and the result is profit.

It is well edited, and we think so much of it as to have it bound in Turkey morocco, and give it a prominent place in our library. It has, so far as we know, a handsome circulation. In our office, we place it directly alongside the *HORTICULTURIST*, and have obtained for it this year, nearly 300 subscribers, and next year we hope to get at least 1,000. Our names are on it as New York Publishers, and we receive for it both subscriptions and advertisements, and attend to this business promptly. We advise all our customers to advertise with the *Gardener's Monthly*.

Now for ourselves: THE *HORTICULTURIST* is an old, well known, popular and profitable publication. It pays a handsome income which increases yearly,—this year larger than ever before. Its circulation is large and principally among the wealthy men of our country,—men who have fine farms and country seats, and money to spend.

Our advertising patronage has been liberal, of the very best prompt paying class—a class that our readers can do business with safely;—advertisers who have through adverse and prosperous times, persistently spread their business before the public, have done it for years and keep doing it, have grown rich by it, and follow it up with a zeal that characterizes profitable investments. Advertising in the *HORTICULTURIST* pays, pays well, else why do we find nearly every advertiser of 10 and 15 years ago in our columns this month, and for every season from the time they commenced.—Messrs. John Saul, of Washington, D. C., B. K. Bliss, of Springfield, Mass., E. Moody & Son, of Lockport, N. Y., Ellwanger & Barry, of Rochester, N. Y., Hitchings & Co., of this city, Prince & Co., of Flushing, L. I., D. Landreth & Son, of Philadelphia, R. Buist, Philadelphia, B. M. Watson, Plymouth, Mass., and Messrs. Parsons & Co. of Flushing, have been indefatigable advertisers from an early period of our history; their names and business were in our columns 10 years ago, and they are there to-day; they are business men; they do busi-

ness with us because it pays them, and every new enterprising establishment in their trade follows their example. Our charges for advertising are uniform to all. For each insertion Thirty Dollars per page, Fifteen Dollars per column, Fifteen cents per line; each column containing 100 lines. We expect to maintain these prices for 1866, but with a general advance in prices we intend to advance. The *Gardener's Monthly* charges about half of our prices, and considering the width of their pages, less than half; their pages being wider than ours, they give more reading matter in the course of the year. Their subscription price is Two dollars per annum, ours Two dollars and fifty cents, both together, Four dollars. If they have a larger circulation than we have, we are glad of it; the field of usefulness before them they cannot fill, nor we either, nor both of us together.

ANOTHER monthly issue of this Magazine will close the twentieth volume, and with it the term of subscription of most of our readers, all of whom, we hope, will renew early for the coming volume. The year now closing has been the most prosperous and profitable one in our history. The volume, one that has no superior, the best talent in the country has been employed on its pages, liberally paid for, and indicates success.

The Twenty-first Volume begins with the January number for 1866. In it we propose to embrace many improvements, and make it worthy of increased attention. We aim at a high standard and shall gradually approach it; all that will help to make this Magazine first rate in all departments we intend to take advantage of.

We should be glad to have our subscribers renew early, and induce as many as possible to subscribe with them, thus extending our circulation liberally into all parts of the country. New subscribers for 1866, coming in this month, will receive the numbers for November and December free. Our subscription price for 1866 will be Two

Dollars and Fifty cents. Those who wish back volumes, can have 1865, bound and post-paid, with numbers for 1866 for \$4 50; or 1864 and 1865, bound and post-paid, with the numbers for 1866 for \$6 00. The three volumes containing nearly 1,200 royal octavo pages of reading matter liberally illustrated.

FOR SALE CHEAP. — Twenty-five Volumes of the "American Stock Journal for 1863," devoted to improvement of Domestic Animals, 200 quarto pages, handsomely bound and post-paid to any address for 75 cents, just the cost of binding.—

GEO. E. & F. W. WOODWARD,
37 Park Row, New York.

IONA GRAPES.—We have received from Dr. C. W. Grant, some very fine specimens of this truly choice grape; a grape that promises to be best of all our native grapes so far as known. We are very much pleased with the Iona grape this year, and hope time will prove it to be first class in all respects.

MOORE'S HYBRID GRAPES.—We have received from Messrs. Moore Brothers, of Rochester, New York, specimens of four varieties of their new hybrid grapes, designated under the following names: "Diana Hamburg," "Clover Street Red," "Clover Street Black," and "Improved Clinton." The first three mentioned are from seed of the Diana fertilized by Black Hamburg, the last from seed of the Clinton, by Black Hamburg.

The Diana Hamburg, the best grape of the four kinds sent, bears more evidence, in the flavor and firm fleshy character of its berries, of foreign parentage than either of the others. The Clover Street Black and Improved Clinton are both very promising varieties, and are said to be early in ripening. The Clover Street Red is an excellent grape, resembling the Diana in flavor, and ripens late.

These vines are said to be perfectly hardy, having been fully exposed on a trel-

lis the past winter. If, in addition, they are found as capable of resisting mildew as our well known varieties, they will prove a valuable addition to our list of hardy grapes.

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AUCTION SALE OF IONA GRAPE VINES and other leading varieties.

Messrs. Parsons & Co., of Flushing, N. Y., announce in our advertising columns, a public sale of Iona Vines, to take place in November (see advertisement). This enterprising firm, who propagate grape vines of best qualities on the largest scale, are enabled to make this sale the most attractive one of this kind ever held in the country.

—————
ITHACA, N. Y., September 8, 1865.

I write from the, no longer to be secluded, end of Cayuga Lake, the loveliest village in the State, with its magnificent trees,* neat fences, shrubbery, fruit and vegetable gardens; comfortable and roomy houses, with gable ends to the street, where no man envies his neighbor who lives in a yellow or brown house, for they are all white; where every building is well kept and in good repair, except *one*, doubtless in respect to the old adage, that—there is no rule without an exception—with its well-to-do inhabitants, every man having employment and such pay as enables him to make a good appearance; where there are no beggars, indeed no poor; where ostentation is unknown, and where the millionaire cannot be distinguished from his neighbor by his dress or style. Indeed, here seems to be embodied the poetical idea of the equality and simplicity of the golden age; every man sitting down under his own vine and fig tree, with none to make him afraid.

This place has been overlooked, because not on the direct route of travel, and thous-

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*One of these is known as Judge Bruen's riding whip, a willow twig stuck down forty years since, "to see if it would grow," after being used for five days to urge his steed over the mountains, from Kingston, on the Hudson.

ands have heard of Auburn and Elmira, about equal distances north and south, who know but little of Ithaca. It is, however, destined to make a greater figure on the map, and to be oftener heard of in the future. The world moves, and in its revolution Ithaca assumes an unwonted prominence; not from any sudden upheaval of its lower strata, or from any borings into its depths. Like its ancient namesake, it is still the abode of *wisdom*, and the acts of a single individual are destined to give it a position, which "all the modern improvements" could scarcely effect.

One of its citizens, who many years ago engaged in constructing Telegraph lines, invented a plough to lay the insulated wire in lead pipes under the ground; and finally, when that failed, adopted the present method of elevating it on poles, has had the sagacity to retain his Telegraph Stock, which, in many instances was forced upon him as part payment for its construction, until it has produced him immense wealth, and this he is diffusing with a liberal hand and admirable judgment during his lifetime for the benefit of his race, already realizing that it is more blessed to give than to receive. Unlike other rich men, he has no ambition to "make his son the richest man in America," nor to found an asylum *after his death*, to perpetuate his memory. His munificence is dispensed with a liberality that will build a monument while he lives, that shall "send lightning, that they may go and say unto thee, here we are unto all future time."—*Job*, 38, 35. I allude merely to the sums contributed quietly by this people's almoner to the deserving poor; to the neat structures built and repaired, to be occupied, rent free, by the widows and orphans; to the school-rooms fitted up and handed over to the undeserving female teacher; to the aid given to the Sanitary Commission, during the rebellion, and other acts of liberality, though all these are to be heard of and seen here, and may justly make Ithaca proud of her philanthropist, Ezra Cornell.

This, however, is but a drop in the bucket. He has erected at his own expense, and at a cost of one hundred thousand dollars, a fire-proof building for a free library, reading and lecture rooms, besides rooms for the Agricultural Society, Farmers' Club, Firemen's Association, drill-rooms and armory for the militia, and has appropriated a large sum for the purchase of books, and set aside another sum, the interest of which is to be applied for all time to the purchase of new publications and periodicals for the free library. Another institution is also in the course of construction, to cost an equal sum with the Cornell Library, to be devoted to the education and qualification of nurses for the sick, and a Hydropathic Institute, a joint stock company, of which Mr. Cornell is the principal proprietor. But the crowning act of benevolence, of which the former may be considered but the stepping-stones to a more munificent donation, for the benefit of future generations, is the founding of the Cornell University, under the act of Congress of July 2d, 1862, and of the Legislature of New York, of April 27th, 1865.

It is now a matter of history, that Ezra Cornell has placed at the disposal of the Trustees of the Cornell University, the princely sum of half a million of dollars for the establishment of a seminary of learning of the highest grade known in the world, to be located at Ithaca. In addition to which he proposes to give two hundred acres of land to found an Agricultural College, forming a part of the Cornell University, which is "to teach such branches of learning as are related to agriculture and the mechanic arts, including military tactics, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

By the act of Legislature, this Institution receives the land grant of Congress to the State of New York, nine hundred and ninety thousand acres, the proceeds of the sale thereof to be invested by the State of New York, and the interest (only (to be

paid to the Trustees for the annual support and maintenance of said Cornell University.

We already have our fine schools and fine academies, now we are to have free Colleges and free Universities. The Cornell University proposes annually to receive one student from each Assembly district of the State, to be selected by the Board of Education of each County and City, in consideration of superior ability as the best scholar from each academy or public school, to whom they will give instructions in any or all the prescribed branches in any department, free of any tuition fee or of any incidental charges. And will also be open to admission thereto, at the lowest rates of expense, to all others, without distinction as to rank, class, previous occupation, or locality. The Board of Trustees met at this place on 5th inst., organized, and have taken the necessary steps to fulfill the duties of putting the Institution into operation at the earliest practicable period. With a large cash fund, and the energy of its founder, who is President of the Board, this will not long be delayed.

W. A. W.

SOUTH AMBOY, N. J., Oct. 2d, 1865.

EDITORS OF HORTICULTURIST:

Dear Sirs,—In the September number, there is an article on the *Gladiolus*, by E. Ferrand. Mr. Rand tells us that the bulbets must be put aside for eighteen months, and that then not one will fail to come up; but if planted the next spring after gathering, "not one in a hundred will come up."

If Mr. Ferrand would give his experience on this point, he would confer a favor.

Yours, truly,

G. S.

BOOKS, &c., RECEIVED.

ORCHID CULTURE.—Messrs. J. E. Tilton & Co. have in press a Manual of Orchid Culture, by Edward Sprague Rand, Jr., author of *Flowers for Parlor and Garden*

etc.; beautifully illustrated with colored plates and wood cuts. This volume is a complete guide to the cultivation of orchidaceous plants, giving every direction necessary for the successful cultivation of every known species and variety of both terrestrial and epiphytal orchids. The work is divided into two parts: the first cultural, containing sixteen chapters upon culture, temperature, construction of houses, treatment of newly imported plants, potting, propagation, ventilation, watering, the flowering season and cool treatment. The second, a complete list of species, with particular directions for the treatment of those requiring special culture. This volume, which has long been needed, will supply every want, and reviews orchid culture from its earliest days down to the present time. It will prove invaluable both to the gardener and amateur.

SEVENTH ANNUAL REPORT of the CHAMBER OF COMMERCE of the State of New York, for the year 1864-65.

SORGHO SUGAR GROWER.—The culture and manufacture of Sugar and Syrup from the Chinese and African canes, published by Webster & Co., 186 South Water-street, Chicago. Sent free to any address.

DREER'S DESCRIPTIVE CATALOGUE of Bulbs and other flower roots, with directions for their culture and management; also, a list of the most desirable Winter blooming plants, roses, &c. Henry A. Dreer, Seedsman and Florist, 714 Chestnut-street, Philadelphia.

DESCRIPTIVE LIST of Hardy Native Grape Vines, cultivated and for sale by Geo. W. Campbell, Delaware, Ohio.

GRAPE VINES.—Description of stock of vines for sale at Iona Island, with some account of our four best hardy kinds; fourth edition. C. W. Grant, Iona, near Peekskill. New York.

THE HORTICULTURIST.

VOL. XX.....DECEMBER, 1865.....NO. CCXXXIV.

OCTOBER.

BY G. P. DISOSWAY.

“Earth of man the bounteous mother,
Feeds him still with corn and wine;
He who best would aid a brother,
Sharec with him these gifts divine.

“Many a power wit^hin her bosom,
Noiseless, hidden, works beneath;
Hence are seed, and leaf and blossom,
Golden ear and clustered wreath.”

IN the warmest, as well as coldest climates, there are but two seasons of the year, but they are very different. With the coldest, the summer is about four months long, when the heat is extreme, because of the long days. The winter lasts eight months and the most intense cold immediately succeeds the violent heats, the rains lasting four or five months, make the difference between the summer and winter.

There are *four* distinct seasons only in the temperate climates, such as ours. The summer's heat gradually diminishing, the autumnal fruits have time to ripen little by little, without any damage from the colds of winter. So in the spring, plants sprout and grow insensibly, without harm from

the late frosts, nor too much hastened by the early heat.

This change of seasons, well deserves our admiration and gratitude to the AUTHOR of all our blessings. It cannot be attributed to blind chance, simply because there can be neither *order* nor *stability* in *fortuitous* events. In all countries of the earth, the seasons succeed each other with the same regularity, as the nights do the days, precisely at the appointed time—and not by dark *chance*. We doubt not, the same Divine wisdom and goodness extend to the other planets. They are like the earth, and like our globe are influenced and warmed by the great orb of light; they must have their days and nights,—their summers and winters. Thence, may we not conclude, that those distant bodies are also inhabited with living creatures? And what an impressive idea does this give us of the power and magnificence of the great CREATOR of all things! How vast is his empire?

As our season advances, its character changes. At first, it was full of enjoyment

with a balmy softness in the air, and beauty and serenity over the blue skies, the fields enameled in gold and living green, and every thing was rejoicing and glad. Towards the close of autumn, however, a deeper sentiment seems to settle upon the human mind. Night has stolen slowly but sensibly on the day—the bustle and cheerfulness of the fields have ceased, the yellow grain has been plenteously reaped and gathered, and the earth, lately shining in golden richness, appears withered and bare. The pastures assume a darker hue; the woods, although still inexpressibly beautiful in the varied, fading tints, plainly speak of decay. It is impossible for a mind of any real sensibility, to resist the spirit of seriousness, which now rests on the land and waters, broods over the forests, and sighs in the passing breeze. But there is a pleasing melancholy feeling, not unmixed with enjoyment and moral sentiments. The decay of nature strongly reminds us of our own—for we, too, must surely fade into “*the sere and yellow leaf*,” and fall away from the earth. At this moment, we should think of HIM, the touch of whose Almighty hand, changes everything—HIMSELF alone unchanged!

At this autumnal moment, when the days still glow with brightness and warmth, and the thermometer scarcely indicates any decrease of the temperature, and when the most perceptible changes is some encroachment of the night on the day, there is a most remarkable alteration in the physiological condition of plants. This is a diminution, and finally the total suspension of the flow of *sap* from the roots, on which the vegetative process depends. One early and important result of this diminished action is the ripening of fruits and seeds; and it has been found that whatever diminishes the vigor of the vegetation, hastens the maturity of the fruits. Some gardeners know that by stripping trees of their leaves, the fruit will be sooner ripened, and this is effected not so much by exposing it to the sun, as interrupting the full flow of the

sap. The maturity of the fruit is a proof that the vital power has become less vigorous. This is particularly obvious in the ripening of grain; the plant loses its verdant color, the leaf shrivels, the seeds grow hard, and every thing indicates the sap has ceased to flow. Its vegetative power exhausted, and the object of its creation now fulfilled, it finishes the destined course.

The duration of the stem and branches is very different in different plants; and the longevity of some trees is most striking. In our former article we described the “*Old Tulip Tree*” of Monmouth, N. J. “*The Gentleman’s Magazine*” of 1762, contains an account of a chestnut then growing at Tamworth, England, and said, at that time, to be the oldest, and certainly one of the largest trees in that land. It measured 52 feet in circumference, and the period of growing from the nut was fixed at the year 800, in the reign of King Egbert. From that date to King Stephen is 335 years, when it was fixed as a boundary or land mark, and called by way of distinction, “*The Great Chestnut Tree of Tamworth*.” From the first year of Stephen’s reign, (1135) to 1762, is 627 years, so that the entire age of this forest monarch, at that period, reached 962 years. It bore nuts in 1759, from which young trees were raised*. Some kinds, natives of more genial climates, have lived longer than the great Chestnut of Tamworth. Olives of a most venerable growth are now found in the garden of Gethsemane, near the bottom of the Mount of Olives, and are supposed to have sprung from the roots of those existing during our Saviour’s life. Wonderful instances of the vegetable vital principle,—after the lapse of more than *seventeen* centuries, scions of those venerable olives,—still exist to mark the sacred, hallowed spot!

Wheat, sown in autumn, passes through the first important steps of the vegetative

* *Encyclopædia Britannica*.

process before the severity of winter sets in. When the seed has been in the ground about two days, it begins to swell, and the juices communicated to the bud, cause it to shoot out the root, which at first is wrapped in a kind of purse. Within a few days, two other roots, spring forth in a lateral direction. In the meanwhile, under favorable circumstances, the grain will begin to push its green points through the surface of the earth, about the sixth or seventh day. This feeble stem is nothing more than a folded bundle of leaves, from which is formed the future spike. In a few days after the stem emerges to the light, the parent seed which has been gradually giving its milky juices to the nourishment of the new plant, shrinks and begins to decay. Then follow the leaves and stem, and in this state, the plant bears all the severities of the winter, the pelting of heavy rains, with the sudden alterations of the temperature. By the aid of this mysterious power, the vital principle, which, if it does not generate heat, certainly resists the in-

fluence of the cold. As the season advances and becomes more genial, the stem shoots vigorously upwards, and during the whole period of youth, its nourishing juices have been amply supplied from the root. At length, however, it is necessary, that the grain should ripen, and its useful farina be secured, and for this purpose, the same ALMIGHTY, wonder-working Hand, which has so strikingly nourished it, now arrests the flowing of this nourishment. The vegetative power has accomplished its task, the seed has been perfected, the fibres of the plant become rigid, the grain hardens, and the stem assumes a golden hue, which indicates that the vital principle has departed. Nothing now remains, but that the industrious husbandman should secure the enriching prize, which a bountiful Providence has awarded to him.

"Sow thy seed, and reap in gladness!
Man himself is all a seed;
Hope and hardship, joy and gladness—
Slow the plant to ripeness lead."

The Clove, S. I., Oct. 1865.

GROWING GRAPES IN COLD VINERIES.

BY G. HOWATT.

MESSRS. EDITORS,—According to promise, I send you my system of Grape Growing, as you have seen and tasted my grapes after one year's planting, you can vouch for its accuracy in the fruiting. I have often thought how easy it would be for a farmer to grow his own grapes, at least all who have a barn with one side of it having a southern aspect; there is nothing more simple to grow and fruit than a grape vine. A great deal has been said and written on vine culture under glass, a very great deal of it unnecessarily. I think that I can show that any farmer can grow them. The whole secret of grape growing is to have a good border; make that right, and you may rest assured of perfect success; then it matters not whether you grow on the rod or spur system. Last April I prepared a

border as follows: carted into it good yellow loam from the road-side and fence rows, to every five loads of loam one load of well rotted stable manure. My border is thirty inches deep, (two feet deep, when top dressed, will answer). Last year I collected all the dead horses, cows and calves that I could find in our neighborhood and buried them until wanted; I then carted and mixed with the above as we were filling. A few days before filling the border, I had given to me two dead cows, a horse, a mule, and two calves; these I placed in the border, chopping them in quarters and dividing evenly inside: from these we have had no unpleasant effluvia arise as might be supposed would be the case from such raw material. I filled it two feet deep with loam, dung and carrion; over this I put ten

inches (allowing four inches for shrinkage,) of chopped loam, manure, two loads of leaf mould, (from woods), and twenty bushels of bone dust, all mixed well together before putting on the border; this keeps the roots well to the surface. My border was then finished inside and ten feet on the outside. This coming spring I intend adding with the same made compost, ten feet more to the width of the outside border, giving then twenty feet of border outside. The following year add the same and the border is finished thirty feet from the house. (If the border can all be made at once so much the better; my reason in not doing so was for lack of material). My house is fourteen feet, inside measurement, sash thirty-two inches wide; to each rafter I plant two vines inside. Six feet from front I have posts set sloping to the rafter, so that they are seven feet from front to top; to those I also plant two vines. On back wall I also plant two vines (together as the others); planting them so that they will come in the centre of the posts and sashes; by this means the front vines do not shade them. I have in this house eighteen varieties, but the greater part of them Black Hamburgs. My object in planting two vines together is, that I may get a light crop of grapes of the one set of vines next year, and the following year a full crop. From the vines I intend to leave permanently, I do not take any grapes until the third or fourth year after planting.—When these come into full bearing, I cut away altogether the vines that I have been fruiting, thus leaving but one vine to the sash, post and wall. If I conclude to grow them on the rod system, I would let both vines stand, and fruit them every alternate year,—fruiting next year on this year's wood,—then cutting it down to make wood for the following year's crop. This system has no advantage over the spur system, except that it looks better to the eye.

I planted my vines on the 20th of June, (since) all one year old plants, excepting 24 that were two years old. In planting,

spread the roots well out and cover only one inch over them; cut the vines to two eyes and let both grow to eight or ten inches long, then nip off the weakest about the first of July, (or later or earlier, depends on what time you plant your vines). Cover your border inside and outside with hay, straw or bottom grass, about three inches thick; this is to prevent the young roots from being burnt. In training the first year, be careful and save the top of your vine; let it run all it will. All laterals and tendrils keep well pinched off. The laterals (side branches), should be pinched off at the first or second eye from the main stem; this will throw the growth to your leader. Water your vines once or twice a week, according to growth and weather. The best way to ascertain whether your border is dry is to run your finger down; if it is moist to that depth you are sure it is right. Your outside border will not require watering first year; the vines should be syringed twice a day until September, and then once a day to October, in the morning by six o'clock, leaving your house closed until eight or nine o'clock; this gives a fine moist heat. In the afternoon close your house at four o'clock and give another syringing; this gives a good moist heat for the night. About the first of November leave your house open day and night, giving all the air that you can; this is to ripen the wood, and you will soon see them a good brown color. Latter end or middle of December, prune and lay them down; in pruning select the strongest vines (those you intend fruiting next year) and prune according to the number of bunches you wish them to bear, from three to eight feet long. Those that you intend for wood next year, cut down to five or six eyes from bottom. When all are pruned, make a mixture of soft soap, whale oil and sulphur as thick as paste, and with a paint brush apply it to all your wood, covering the whole of it down to the roots; this will prevent the mice eating them and kill all insects. When this is dry, take some straw ropes and

bind them from bottom to top, letting each round press against the other; then lay them along and tie them together, as you proceed bringing the end ones towards the middle; when this is finished cover all with straw and leaves.

Second year: about April, clear off your borders inside and out, also take your straw bands off, wash off the mixture, leaving the vines in about the same position as they were in winter; this makes them break evenly and stronger. Fork your border over lightly, say two or three inches deep. When the eyes have grown an inch, lay them up carefully to their places, giving them plenty of air in this stage of their growth, and syringe once a day for a month. This must only be done in the morning in cold vineries. About middle of May they should be syringed twice a day, and continued until your grapes are in flower, at which time you must discontinue syringing altogether, giving plenty of air until your bunches are set. When set, repeat the syringing twice a day until your berries begin to color; your syringing must then be discontinued. When they are about the size of peas you commence to thin the berries out. To an unexperienced hand this must be repeated two or three times. One berry should not touch the other. Your fruit will start from the first or second eye on the lateral from the main stem. When your fruit is set you should stop this lateral (that is nip it off) between the first and second bud above your bunch; this bud then breaks (grows) and makes another shoot; this you also stop at its first bud. Those are left to draw the sap to your bunch. All shoots that appear from this eye take off, and all shoots that should appear between your bunch and the main stem, nip off, as they would take the sap from your fruit, but in no case take off any of the large leaves, even if they should cover your fruit. You must be careful that your border is kept sufficiently wet until your fruit begins to color (same rule as first year). Also mulch your borders the same;

you should give your vines this year plenty of liquid manure. If you have not a liquid manure tank, sink some hogsheads in your yard for the purpose of collecting it, and water your vines twice a week with it, from the time your bunches show until they commence to color. In watering with liquid manure, be sure that your border is wet before you apply it, for if dry, the probability is, that you would kill your vines or lose a year's growth and your crop. A good and sure rule is to water with clear water the evening before you water with the liquid manure. Keep pans of sulphur about your vines during the summer; this may prevent, and it will, at least, check mildew. My plan is, five or six times during the summer, after the fruit is set, to close up the house tight, and about twelve o'clock take some sulphur and sprinkle it thoroughly through the vines; let the house remain closed for an hour, this gives an immense heat, but I think it opens the pores of the plants and kills the fungii, at least such has been my practice, and I have never had mildew in a cold vinery. Let it not be supposed that this violent heat will injure your vines; you will, on entering, see them (if the expression may be allowed) in a fine perspiration. Syringing will wash all the sulphur out of the fruit. In the fall of the second year after your fruit is off, leave your house open night and day to harden and ripen your wood as long as the weather will permit. If you conclude to grow on the rod system, cut down your vines that did not bear this year to the same length as those that you fruited this year. Those that have fruited this year you will cut down to two or three feet from the border, and grow on them only wood next year, for fruit on following year. If you conclude to grow on spur system, you will let the vines that bore no fruit this year bear none next year, and cut them down to about three feet in length and treat same as first year. Those that bore this year, in pruning, you will leave about three feet of this year's wood and

you will have a crop next year. The following year let those same vines, in pruning, be left full length of your house, and the next year let them bear all that they will, as you then cut them out to make room for your vines grown on the spur system.—Every fall after the first year, let the borders inside and out be forked over, and lay on from four to six inches of good rotted manure, and in the spring fork it into the borders, tying the vines also same as first year with straw ropes. In growing vines on the spur system, you let your vines remain full length of the house. The pruning is done by cutting all the laterals close into the main stem; it will from this throw out a branch on which the fruit will show.—There is to each spur what we term a “hatter of eyes.” Select the strongest of these eyes for your lateral, rubbing off all the others. The advantage of this is, that it takes away that unsightly thing—a spur, three or four inches long and half as thick as your main stem. You gain nothing by leaving the spur on, as from its base you get a bearing stem. Your stems, then, at all times looks clean. When shown, treat as directed in wood, &c., &c. For a few years only let every alternate lateral bear; this strengthens your vine and it will last a number of years. Every year prune and cover as directed;—this is all the spur system.

The above is written more for farmers, as I have given most minute particulars for their guidance, and all farmers will see that they can be grown as easily as any other crop without the assistance of a pro-

fessional gardener. My growth this year from one year old plants is seventy-four feet long and one and a quarter inches in circumference. Twelve feet of this I can make bearing wood for next year, if I wish, and those vines have only been attended to by a laboring man.

In making the vine border, I forgot to mention that the bottom of the border should be well drained, that is, have the bottom slope from the house to the outside of the border, sufficient to carry off all the water. If the bottom of the border is a hard pan, so much the better, as the object is to keep the roots of the vines as near the surface of the ground as possible. If the roots penetrate to cold sub-soil, it will occasion shanking in your fruit. When there is any danger of that, I always concrete my bottom three to six inches thick.

In making your border, add one-eighth part (that is one load to eight) of broken bricks, old lime rubbish and broken oyster shells through your compost; this is to keep it open. Add one-tenth part, if possible, of charcoal dust or broken charcoal; this saves all the ammonia from your other manures, and always retains a moisture in your border. In fact, I consider it a principal ingredient in making a vine border. I generally use the bottom of old charcoal beds. I shall send you my system of peach growing in pots in vineries where there are no vines planted against back wall or middle of the house, as I have grown peaches, strawberries and vines in the one house.

NOTES UPON NEW AND RARE GREEN-HOUSE FERNS.—No. 2.

BY DANIEL BARKER.

GENUS POLYSTICHUM.

Selection of the most rare and beautiful. There are so many well marked varieties of this most beautiful genus, that we find it a most difficult task to undertake the *selection* of the *most beautiful* when *all* are beautiful and merit a place in the Fernery.

Some of the varieties of “Angulare” may, with protection, endure the rigor of our winter, but they are altogether too elegant and rare to risk otherwise than in the shape of duplicates.

POLYSTICHUM ARGULARE IMBRICATUM.

A very graceful and interesting variety,

with dark green fronds from one to two feet in length.

P. A. GRANDIDENS.

A most beautiful and distinct variety; a dwarf form of "Angulare," and thoroughly constant under cultivation. Length of fronds from 1 to $1\frac{1}{2}$ feet.

POLYSTICHUM ANGULARE DUBIUM.

A very large growing variety, the fronds often exceeding 3 feet in length; a most noble fern.

P. A. OBTUSUM.

A most elegant variety. We have seen but a single specimen of this very beautiful fern, and notwithstanding, we presume it is not yet introduced to this country, we are unwilling to omit including it, as it certainly is one of the most rare and beautiful.

P. A. MULTIFIDUM.

Should this variety prove permanent, it will be one of the most beautiful of the many varieties of "Angulare." The specimen we saw had the apex of each frond terminated in a beautiful feathery-like tuft.

P. A. CRISTULATUM.

A noble form; the fronds are from $2\frac{1}{2}$ to 3 feet in length by 12 inches wide, and not unfrequently crested; rare.

P. A. DECURRENS.

A very distinct and desirable variety; fronds from 1 to $1\frac{1}{2}$ feet.

POLYSTICHUM ANGULARE ROTUNDATUM.

One of the most beautiful of all the varieties; fronds of a deep shining green, from 1 to $1\frac{1}{2}$ feet in height; a very rare variety.

P. A. LATIPES.

A noble fern of very large size; fronds from 3 to 4 feet high, the base of which are from 9 to 10 inches wide. Soon as procurable should be in every select collection of ferns.

P. A. CORYMBIFERUM.

In some of the European collections of ferns, this variety is thought much of, and

when in its multified variation is exceedingly beautiful. We apprehend it will prove inconstant.

P. A. PROLIFERUM FOOTIL.

This is undoubtedly one of the most elegant of the Polystichums. Young plants are exceedingly interesting and beautiful; fronds from 1 to $1\frac{1}{2}$ feet.

P. A. FOLIOSUM.

This variety we have not seen under cultivation, but the description given by one of the first authorities, consider it one of the most beautiful in cultivation.

POLYSTICHUM ANGULARE PLUMOSUM.

A most elegant, large growing variety; fronds from 2 to 3 feet in length, and most gracefully arching.

P. A. PROLIFERUM WOOLLASTONI.

An almost pendant variety, exceedingly handsome. This elegant and graceful kind should be in every collection of green-house ferns.

P. A. OBTUSISSIMUM.

A most remarkable fern; extremely beautiful and very rare.

P. A. KITSONIA.

A most splendid variety, considered by some of the first cultivators of ferns in Europe, to be the most beautiful of all the varieties of "P. Angulare." The rachis of each frond is divided into several tufted corymbose heads. Quite constant under cultivation.

P. A. CONCINNUM.

A very pretty variety of a rich deep green color. The habit of this is exceedingly graceful.

P. A. GRANDIDENS SICCIFORME.

A very handsome dwarf growing variety; well adapted for the wardian case.

POLYSTICHUM ANGULARE THOMSONIA.

Fronds from 10 to 12 inches, the apex of each most beautifully crested in Corymbose heads from 2 to 3 inches wide.

P. A. GRANDICEPS.

Fronds from 1 to 2 feet, of a rich deep green color; a really splendid variety. We think the most beautiful of the crested forms.

The above named varieties are a selection from near one hundred varieties of which we have made notes, and consider them the most beautiful of them all; but as "tastes differ," there may be those as great ad-

mirers of the order "Fillices" as ourselves think otherwise. Be this as it may, each of the above has their special beauties and peculiar habits and individual claims upon our attention. As Homer says:

Some charm when nigh,
Others at a distance more delight the eye:
That loves the shade, this tempts a stranger light,
And changes the critic's piercing sight:
That gives no pleasure for a single view,
And this ten times repeated still is new.

NEW HYBRID GRAPES.

BY JACOB MOORE, ROCHESTER, N. Y.

THE hybridization of the grape is a subject now attracting a good deal of attention, and as I have raised a number of good varieties by this method, I herewith furnish a description of them. I consider the hybridization of native with the foreign species, or the cross breeding of the best native varieties, the principal means by which further advancement is to be attained in the quality of grapes adapted to this climate. These were produced, in every case, from seed of the native varieties mentioned.

Clover Street Black.—From the Diana by Black Hamburg. Clusters large, about the size of Concord; compact, regularly shouldered; berries large, roundish, size of Concord, black, overspread with dark violet bloom; flesh tender, sweet and excellent, somewhat similar in flavor to the Hamburg, but livelier and wholly devoid of the offensive musky taste of the Diana. The vine is a moderately vigorous grower, with broad leaves as thick or thicker than those of the Delaware, and without down underneath; hardy and productive, and the fruit ripens with the Concord or earlier. Bore this season for the first time, and was fully ripe by the middle of September; very promising.

Clover Street Red.—Same origin as preceding. Clusters larger than the Diana, of the same shape, but not as compact, and occasionally with a long branch appended to

the top of the bunch; berries large, roundish oval, crimson when fully ripe, with a lilac bloom; flesh sweet to the centre, tender, juicy, with a slight Diana flavor, but richer and more sprightly. The vine is a rapid grower, the shoots large and leaves thick, downy underneath; productive and as hardy as the Diana. The fruit ripens rather too late for this section, about the same time as the Diana.

Diana Hamburg.—Same origin as preceding. This is generally considered the best grape of the collection. Clusters very large, six to eight inches in length, usually longer in proportion to the breadth than the Hamburg; regularly shouldered, compact; berries roundish, larger than the Concord; dark crimson, covered with rich purple bloom; flesh perfectly tender, breaking to the centre, letting out the seeds like a foreign grape; of sugary sweetness, in flavor remarkably like the Hamburg, but aromatic and more lively, fully equaling that excellent variety. The vine is a slow grower, the shoots firm, short jointed, buds large, leaves of medium thickness, deeply lobed, peculiarly crimped and often rolled inward; hardy and very productive. The fruit ripens just after the Concord, and at least a week or ten days earlier than the Diana.

Moore's Hybrid.—Same origin as preceding. Clusters broad, regularly shouldered, similar to the Hamburg in shape, com-

pect; berries roundish, the size of Concord, dark purple, with violet bloom; flesh tender, very sweet and delicious, nearly equalling the Diana Hamburg in flavor; vine a rapid grower, with large firm shoots and thick leaves; hardy and very productive; fruit ripens same time as preceding varieties or earlier, and the clusters are probably equally large, but this cannot be decided upon as yet, this being the first season the vine has borne.

White Musk.—From the Isabella by Royal Muscadine. Clusters and berries of the same shape and nearly as large as the Isabella, but of yellow color; flesh of the slightest possible consistence, nearly all juice and semi-transparent, showing the seeds; very sweet and delicious, having a *foreign muscat flavor*; vine a rapid grower, with light colored shoots and thin deeply lobed leaves; very productive and hardy so far as tested. This variety requires a shady situation, as the leaves are liable to sunburn if too much exposed, and the fruit apt to be insipid.

I have some other hybrids, but they are not equal to those described. One between the Catawba and Black Hamburg, which I call the Catawba Hamburg, is very large, but ripens so late that it will not succeed in this section. There are now clusters on the vine, weighing, I should judge, from a pound to a pound and a half. The color of the ripest berries is dark purple, nearly black; flavor acid and not good.

In sections where it would have an opportunity to ripen, this variety might prove well flavored.

Many persons came to see my grapes when ripening, and some pronounced the Diana Hamburg the best grape they ever tasted, others said it was the largest

and handsomest grape they ever saw grown out doors.

The color of this variety appears to be a blending of the two kinds from which it originated. When fully ripe the berries are dark crimson mingled with minute fiery specks, as of the Diana, over their whole surface. This is more apparent in the sunlight than otherwise, and as may be believed, does not detract from its appearance. Only close observation would detect this feature, however, and I am not sure there are other grapes which possess it.

With regard to hybrids, there seems to be a popular delusion. People seem to think they are necessarily not hardy. This does not follow, indeed, the reverse is true with the *best* seedlings produced by hybridization; this process seeming to have the effect of hardening their wood and rendering them capable of withstanding severities which neither of the parent varieties could endure. I say the *best* seedlings, for there are more or less of weak constitutions, whether of hybrids or common seedlings. What hardier grape is there than Norton's Virginia, which is a hybrid between the Bland and Miller's Burgundy? Allen's Hybrid is said to be harder than its native parent, the Isabella. Rogers' Hybrids are also harder than Isabella and Catawba. Lastly, my own hybrids are as hardy, and some of them *more* hardy than the native varieties which produced them.

In conclusion, I think this combined testimony cannot well be refuted, and I am of the opinion that, in the future, through the hybridization or cross-breeding of not only grapes, but of all kinds of fruit, results will be obtained which have not as yet been dreamed of.

NOTES ON THE OCTOBER NUMBER.

GATEWAYS AGAIN, &C.

THANKS for these additional designs and hints. Would that our country carpenters could be educated to the taste requisite to

form rustic gates or fences. We cannot soon expect to educate the whole people, and as the writer says, the joiner will look at these plans, and then suggest mouldings

and squares, until all of the original design with its rustic simplicity and light airiness is lost in an unwieldy structure whose bare cost for workmanship has doubled that of the entire of the original.

To all of our country rural houses and farm places, there should be always a covered gateway; for, however, practical the patents for freely opening and shutting of the gates, they do occasionally get out of repair, and are sure to do so, just when a severe storm occurs. The covered gateway is then useful as well as being always ornamental. Few think of, yet all appreciate when viewed, the additional character given to a country residence by the style of the approach gate and road.

GREEN-HOUSE PLANTS AND NO GREEN-HOUSE.

A good article, but I must take exceptions to one or two points, not with any less regard for the writer, but that I think he would coincide.—First, where he advises the “cellar windows to be hung at the *top*.” I prefer the bottom, as then I drop the light of sash, and all impure air passes off, while no draft of cold air can come directly upon my plants. My second exception is, that unless a large quantity of plants are wanted from year to year to dress up the grounds, it is cheaper to purchase each spring of the dealer, than to expend the time in potting off and caring for the plants during the winter.

To most of our people who have small means and much love of flowers, the advice to grow any but hardy plants (except as they purchase for summer blooming), is erroneous. The man of wealth can and should keep a gardener, and have houses appropriate to the keeping, etc. of all plants designed to decorate his grounds in the spring, summer and autumn. Where the cellar, advised by Mr. Rand is used, I will name one other beautiful plant that succeeds well so kept—it is the *Fuschia*, or *Lady's Ear Drop*, in common knowledge. The cold frame recommendations should be heeded by all. For roses, it is the best of all modes.

CULTURE OF THE ROSE.

Another good practical article; and as roses are my pets, I may be excused for telling that I am now attending to the erection of a cold house, mainly to extend the blooming season of the rose. It is designed to plant directly in the ground, with the sash so that it may be entirely removed in the summer, and during the extreme cold of winter be shaded. The object is to get the most extent of blossoms with the least of care, avoiding the watering of pots and the care of fires, at an expense of two months rest out of twelve to the plants.

THE BIG TREE OF MONMOUTH.

Well, I have read this article, and beyond about one dozen lines recording simply one of the thousand trees abounding in our great country, especially of the West and California, I am at a loss to know——well, I should like much to know those boys and cockney's names, abraded on the bark of this noble tree, which were “thus to be handed down to posterity.”

NEW ERA IN GRAPE CULTURE.

Another of Mr. Husmann's plain, practical statements. To one item, however, I must take exception, viz: the first, pruning of the bunch leaves, while I concede the instructions for summer pruning perhaps better than what Mr. H. denominates old fogy practice, I cannot agree in his mode of pinching back the shoots so close to the bunches of grapes. Leaves, it is well known, are the lungs of the vine, and without them, neither the fruit can ripen, nor yet new roots develop. Both must be carefully studied to enable large crops of fruit to be yearly grown, and yet continue the health and vigor of the vine. To close early and severe pruning of our naturally strong and vigorous vines, I think we have to look for some of the cause of diseases too common in the oldest planted vineyards of our country.

To the denominated old fogy practice, I have more objections than that advised by Mr. H. A mean, and that not adapted to

all varieties alike, as is now the practice, is what I prefer, but rarely find adopted.

The subject of grape pruning is a wide one for discussion, and like southern secession, all of its errors will not disappear until its practitioners have been changed by a new generation—a generation of whom each man shall have studied vegetable physiology, as well as practical cutting of the vine.

NAOMI RASPBERRY.

From this description it would appear a desirable variety; but my advice is, to buy sparingly of new things. Get, if you will, one or two plants and test them. By-the-by, who can tell us of the *Stover* Raspberry, so lauded a few years since by some of our Philadelphia horticulturists?

FOOTE'S EARLY ORLEANS PLUM.

No better credit can be attached to a fruit, than to say Charles Downing approves it; but unfortunately many sections of our country find plum growing a decided failure, without more expense of time and labor than is profitable.

HYBRIDS AND CROSS FERTILIZATION.

The author has well argued his case, which, by the way needed no argument to convince any but those who were disposed

to remain wilfully blind. The very foliage of the varieties, I think, is testimony enough of their hybridization. The color or flavor of the fruit is no indication, but foliage tells.

DISAPPOINTED HOPES.

I cannot see how, in accordance with the knowledge which is generally claimed, that the life and health of a plant is affected by the condition of its foliage. Any *fixed* habit could be acquired in a vine to cause any such extent of mildew as is here recorded. I should look rather to a neglect of attention—not giving enough or giving too much of air, at a period when the atmosphere was impregnated with the poisonous sporules or mildew miasma. This, taken in connection with perhaps too much of “fatty” soil, or maybe water at the roots, would lead me rather to judge of the cause than belief of a vine acquiring a “fixed habit.”

STRAWBERRIES AGAIN.

A record of success that may be copied in like soils. Cultivators, however, must bear in mind that all soils do not require the same treatment, nor will all varieties do equally well with the “Albany,” when planted in rows or beds.

REUBEN.

From the London Journal of Horticulture.

A PRACTICAL TREATISE ON THE GRAPE VINE.

BY WILLIAM THOMPSON.

IN the short space of three years, Mr. Thompson's admirable treatise on the cultivation of the Grape Vine has passed through four editions. Such an event is not to be wondered at, when we consider the experience of the author and the way in which he has, through these pages, communicated that experience to others. No better test of the appreciation in which the work is held can possibly be furnished than the appearance of the fourth edition, which

contains some new matter that has suggested itself to the author since the last edition was published. We observe there are two new chapters—one on “Scalding,” and the other on “Stocks for Tender Vines,” which, as it is a subject that has been much agitated of late, we will transcribe:—

“Those who have paid most attention to the subject have come to the conclusion that many of the highest flavored of our

grapes, which are at the same time the most delicate and difficult to grow with success on their own roots, will one day be grown with perfect ease when we have discovered the proper stocks for them, and that late-ripening varieties will be got to ripen earlier when grafted on earlier stocks. I have not myself proved the correctness of the latter, but have read of instances of it, and, reasoning from analogy, am prepared to believe it. Of the former, I had a striking proof in the case of the Muscat Hamburgh on the Black Hamburgh stock. On its own roots I have not grown it above 2 lbs. weight, while on the Hamburgh stocks I have had it 5 lbs. weight, with larger berries and much better finished in every way than on its own roots. I have proved the Black Barbarossa to be a most unsuitable stock for the Bowood Muscat, so much so that the fruit never ripened at all on it, while by its side the Bowood Muscat ripened perfectly on its own roots. The importance of this experiment lay in the proof it gave, that a late stock procrastinated the ripening of the variety grown on it; from which one is led to infer that an early stock, like Sweetwater or Chasselas Musqué, would facilitate the ripening of late sorts inarched on them. Of the excellence of the Black Hamburgh as a stock for such high flavored though delicate grapes as Muscat Hamburgh, and the whole of the Frontignans, I have not the slightest doubt; and I have during last summer inarched these sorts and many others on it, and recommended others to do the same, feeling confident that success will be the result."

At page 28 we find the following valuable hints:—

"I can strongly recommend the following method of planting and treating young vines, from my own experience of it in the past season. It is probably in its details new, but it only requires to be described to commend itself to all who have any knowledge of such matters. I had a large house to plant, chiefly with Muscats, in April, 1864.

I had a stock of one-year-old plants in eight-inch pots by me; I cut the rods back to 4 feet in February, and allowed them to stand in a cold peach-house till the 13th of April, when the border was ready for their being planted; I shook all the earth from their roots and spread them out on the soil of the border, one vine to each rafter, and 5 feet apart, covered the roots with 6 inches of soil, and gave the whole a good watering with water at a temperature of 150°, and covered the surface with an inch of dry soil to prevent, to some extent, the escape of the heat communicated to the border by the warm water. The vines were just bursting their buds when planted, and instead of adopting the usual practice of stopping or rubbing off all the buds but one or two, I allowed all to grow, and tied them carefully to the wires; by this means I had in some instances ten rods to one vine, all of which have, during the season, run to the top of the house, and partly down the back wall, a distance of 30 feet, and many of these rods are as strong as ever I had previously seen a single rod from a vine the first year it was planted. At this date (6th January, 1865) they are not yet cut down, and the whole house is a perfect thicket of wood. I will shortly cut back all these vines to within a foot of the front sashes, and train up two rods from each this season for fruiting in 1866; and I need not tell those who know that a plant makes roots in proportion to its leaves, that vines treated as I have described, will have an enormous excess of roots formed in the border, as compared with others treated on the one-rod and pinching system, and that the bearing-rods they will make this year will be in proportion to the extent and vigor of their roots in the soil. I have just measured one of them that, when planted in April, was no thicker than a writing-quill, and I find that it is now 3½ inches in circumference, and has ten rods perfectly ripe to the top of the rafters, a distance of 21 feet. If, instead of permanent vigor and productiveness, an immediate return were

the object aimed at, I have no hesitation in saying that such a vine would yield 50 lbs. of grapes this autumn."

We cannot too strongly recommend Mr.

Thompson's treatise as a thoroughly practical and sure guide to the cultivation of the Vine.

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

THIS number closes the twentieth volume of the *HORTICULTURIST* and the terms of subscription of most of our patrons; all of whom we hope will send in early for the New Volume. Our Volume for 1865 has been one of the most successful ones yet issued, favorably received, and liberally sustained; its merits have been of a high order, and all articles and voluntary contributions from writers of talent and ability. With the New Year commences our New Volume, which will be made a model of excellence in all the departments of Horticulture and rural art and rural taste; it will be ably edited, handsomely illustrated and carefully printed, and will commend itself to the attention of every one interested in the progress of rural pursuits. With a fine reputation, abundant capital, with prompt energetic business men as publishers, it will be made so that every one who owns a grape vine, a city yard, a garden, an acre lot, a vineyard, an orchard, a country seat, a farm, and who has ambition to excel in fruit culture and in home comforts and adornments, will hesitate at least twice before he declines taking the *HORTICULTURIST* for 1866.

BINDING.—Volumes of the *HORTICULTURIST* for 1865, can be had at this office, handsomely bound, in exchange for numbers in good order, on the payment of seventy-five cents. Covers or cases for 1865, or any former year, will be forwarded,

post paid, by mail, on receipt of forty cents. All periodicals bound in any style, at the lowest rates.

WE SHALL publish, at this office, in January, 1866, in the finest style of Chromo lithography, in colors, a plate of the Delaware Grape, on heavy imperial paper, suitable for framing. Price, three dollars per copy, post paid everywhere.

SPECIAL PREMIUMS.—Each one of our subscribers, new and old, who shall, in addition to his own subscription of two dollars and fifty cents, send us, at any time before the first day of February, 1866, two new subscribers, and five dollars, shall receive, post paid, a copy of the Delaware Grape. Our subscription price is uniform to all, TWO DOLLARS AND FIFTY CENTS per annum, but as the applications are so numerous from parties desirous of forming clubs, we make this proposal: To any person sending us ten or more subscribers, and two dollars and fifty cents each, we will send them any books, papers, or periodicals published in New York, Philadelphia or Boston, to the amount of one dollar for each subscription sent, provided the number sent be not less than ten. Thus, any club agent remitting us 75 dollars for 30 subscribers, will be entitled to 30 dollar's worth of publications at retail prices; this would give him twenty copies of the *American Agriculturist*, or twelve copies of

the Cultivator and Country Gentleman, or fifteen copies of the Gardener's Monthly, or thirty dollars' worth of any books or papers published. Subscription can then be taken for these, and the premiums thus converted into cash.

DEATH OF THE BOTANIST LINDLEY. — Dr. John Lindley, the celebrated botanist, died in England last month, at the age of sixty-six years. His first literary efforts after devoting much of his early youth to the practical details of the science of botany, was the translation of Richard's "Analyse du Fruit," from the French, and the contribution of some papers to the Transactions of the Linnæan Society. After that he proceeded to London, where he was engaged by Loudon to assist in the production of the "Encyclopædia of Plants." In 1832 he published his "Introduction to Systematic and Physiological Botany," but his *chef d'œuvre* was the "Vegetable Kingdom," which gives a comprehensive view of the structure and uses of the plants of the known world. For more than a quarter of a century Dr. Lindley filled the chair of botany at University College, and in 1860 was appointed examiner in the University of London. He was Fellow of the Royal, Linnæan and Geological societies, and corresponding member of many continental and American learned bodies. In 1858 he received the medal of the British Royal Society, in reward of his services to the modern sciences.—*Post*.

AN EDITOR ON HIS TRAVELS.—We had the pleasure, the other day, of welcoming to our sanctum J. Q. A. Warren, Esq., late the editor of that valuable periodical, *The California Wine, Wool and Stock Journal*, and California correspondent of the *Horticulturist*, New York, and *Prairie Farmer*, Chicago (Ill.) Mr. Warren visits the Islands mainly for the benefit of his health, which we hope will be fully recovered under the genial influences of our climate. Combining, however, business with recreation, he

will correspond regularly with newspapers in California and the Eastern States, giving sketches of life and scenery in the Islands.

"Hear, land o' cakes and brither Scots!
Frae Maiden End to John O'Groats,
If there's a hole in a' your coats,
I rede ye, tent it;
A chiel's amang ye, takin' notes,
And faith he'll prent it!"

—*Hawaiian Gazette, Hawaiian Islands*.

—MR. F. K. PHOENIX, of Bloomington, Illinois, wishes to have more plans devised to use grape fruit. Mr. Phoenix is one of the most enterprising nurserymen of the West, and we suggest that he first devise some plan to give New Yorkers at least grapes enough to eat. We are perfectly willing to pay good prices for good grapes, and live in hopes as soon as Sir Morton Peto's plans are completed, for prompt and rapid transportation from the great West, that grapes will be more plenty here.

—Sixty-five cents a dozen for eggs, which we paid last week, in New Jersey, ought to pay a good profit on eggs from Illinois.

—THE New Hall of the Horticultural Society, at Boston, was dedicated Sept. 16th; the President, C. M. Hovey, Esq., delivering the address:

—"They are debating also in Boston" says the *Post*, "the propriety of setting up, at the city's expense, free markets—markets, that is to say, in which no rent shall be charged to hucksters. When they have introduced this great improvement, they ought also to build free tailor's shops; and nothing would add more to the popularity of Boston than a great free lunch—"from ten to three; and perhaps one hour on Sundays. We New Yorkers would think it a very happy thing if we could get clean markets, and would not ask that they be free as well."

—ONE Mr. DUNHAM, nine miles east of Cleveland, Ohio, pays taxes on \$2,236, received last season, for grapes sold at fifteen

cents per pound, raised on one and a half acres of land.

— PATERSON, New Jersey, must be a desirable place. The undertaker here, who is probably something of a horticulturist, heads his advertisement thus :

"He who by the plow would thrive,
Must either hold himself or drive."

"A rapid increase of business," he says, warrants his removal into more commodious quarters," and, "To our friends in the country we feel compelled to return thanks for the very large share of patronage they have given us of late."

— A SOUTHERN paper remarks that "the following General invitation from a Confederate country maiden to a friend in the city was penned before the Confederacy 'went up':"

Come leave the noisy *Longstreet*
And come to the *Fields* with me :
Trip over the *Heth* with flying feet
And skip along the *Lee*.
There *Ewell* find the flowers that be
Along the *Stonewall* still,
And pluck the buds of flowering pea
That grow on *A. P. Hill*.
Across the *Rhodes* the *Forest* boughs
A stately *Archway* form,
Where sadly pipes that *Early* bird
That never caught the worm.
Come hasten, for the *Bee* is gone,
And *Wheat* lies on the plains ;
Come braid a *Garland* ere the leaves
Fall in the "blasting *Rains*."*

*Rains will be recollected as the partner of McDaniel of the torpedo business.

— ONE town in New Jersey ought to have at least 1000 copies of our November number circulated in it pretty freely. "Village and Country Roadside," is an article they could read with profit. Passaic, N. J., naturally one of the finest suburbs of New York is forty-eight minutes from "bright Broadway," by the broad guage palace cars of the Erie Railway. In point of time, one half of the city of New York lies further from the City Hall, but no country place we know of, except Passaic, has in its main thoroughfare so many broken down and abandoned wagons and so much rubbish.

— For the amusement of our western readers, we clip the following from the editorial leader of the "*Maine Farmer*," a prominent weekly agricultural and general newspaper, published at Augusta, Maine. The State of Maine is situated in the extreme north-eastern part of the Union ; and Aroostook County is in the north-east part of the State, on the Canada line.

"As to the question whether a young man shall go to Aroostook or to the West, this must depend upon his circumstances and tastes. We were pointed to a family who were brought up in Aroostook. Several of them settled near the homestead and are now independent, though yet young men ; others went out west and returned with loss of property, and what is infinitely worse, with loss of health. Aroostook is a healthy county. Go through a crowd of a thousand people and you will scarcely see a sickly look among them. We believe this more than counterbalances all other considerations. What is a family good for whose husband is yellow with jaundice, whose wife is sallow, and whose children never knew what it was to have a blooming cheek. This is the picture of those who emigrate from New England to the West and raise up a family there. What is wealth when one must drag out a miserable existence from diseases contracted in an unhealthy climate. * * * * * Let three or four of our soldier boys buy up a neighborhood and clear up the land, and they will enjoy their stories of battles fought during the war all the better as they assemble during the long winter evenings around their cheerful fires."

The soldier boys of Maine, all honor to them, ought to have facts, and we can give them.

There is no healthier section of the globe, not even excepting Maine, than the Western States.

Better farming lands in tracts of 80 acres, can be bought for \$500, on long credits, inside of ten miles from railroad stations, with good roads, churches, schools, &c., than can be cut out of the woods of Maine in half a century.

The young man who commences life in the timber, in this progressive age, makes a life-long mistake. He who pushes for the broad prairies, will travel the road to success.

At the late Northampton, Mass. Agricultural Fair, Col. Daniel Needham, in his address says:

..... "Let us look at the West and compare the farmers there with those of New England. There is not a farmer in the West, down to the present day, who has become rich by legitimate agriculture. His wealth has been gained by selling his land.... As a whole New England farming pays better than any other farming in the world."

New England farming must needs bolstering up badly, but such talk as this wont stand, better study Geography, History, Common Sense, and then travel through the West, and see far beyond your wildest dreams of agricultural wealth and prosperity. Say what you please, and write what you please, the broad and fertile prairies of the West will ever be a drain on the Eastern and Middle States. You cannot keep your enterprising men at home. You will find them now on every swell of the prairie, in every town and city and you find more of them next year, they are the men of energy position, wealth and influence; they do not scratch among stumps and rocks, or moulder around old hearthstones. Better spend your time spitting at the sun than undervaluing the gigantic agricultural resources of the West. It is a natural fact from which there can be no dodging.

THE GRAPE CURE. — Of all the Swiss healing theories, says a writer in *Blackwood's Magazine*, commend me to the grape cure, which is carried out chiefly in autumn on the shores of Lake Lemman. Here is no shivering on the brink of cold baths, or swallowing repulsive drinks. It is worth while having incipient consumption in order to live on grapes in that lovely region. The excellent Dr. Curchod, of Vevay, who is the great authority on this subject, begins his treatise upon it by remarking, "Without going back to biblical writers, who, since Noah, have spoken of the fruit of the vine, we find mention of grapes as a medi-

cine by the Greek physician Dioscorides, who—" This is going back to the commencement with a vengeance; but authorities in its favor are scarcely required to recommend so pleasant an aid to health. It is employed chiefly in diseases of the lungs, but some other illnesses also benefit by it, and its action is elaborately explained in the treatises just referred to. The grapes are eaten daily up to the extent of six or seven pounds weight—the usual price in Switzerland in autumn for the best grapes being half a franc per pound. They contain most elements necessary to a proper nourishment of the human body, but not quite all, so it is usual to take them along with a small portion of other nourishment. The practice, however, is not to be recommended of varying the cure by means of a *déjeuner à la fourchette*, and *table d'hôte* dinner. The average time for pursuing it is about a month, and one of the symptoms of its having taken effect is a peculiar burning feeling, as if the mouth were filled with pepper; but that is easily got rid of. Few things could be pleasanter than to undergo the grape cure, floating about in a boat on Lake Lemman, and residing in the splendid Hotel Byron at Chillon, or the Beaurivage at Ouchy. No doctor is required to recommend it to me, or to declare that I require it. I don't care a grape-seed for Dioscorides or Dr. Curchod. All the doctors in the world may swear that the Traubenkur can do me no possible good. They can condemn me, as Dr. Curchod actually had the cruelty to do, to the mud-baths of Acqui. If it is autumn on the Lake of Geneva, I feel dangerously ill; tubercles are forming on my lungs; bronchitis is dragging me to a premature grave; chronic catarrh has afflicted me long; I have borne too patiently with *plethora abdominalis*; there is hypertrophy of my liver; my brains are hyperamic; every mucous membrane in my body is in a state of violent inflammation. "Ho, gargon! Get me six pounds of grapes, and place them in the boat. Where is Mine la Princesse? No vanity of luncheons more!"

THE HOCK VINEYARDS OF GERMANY.—A Frankfort on the Main correspondent of the Cincinnati Gazette writes as follows of the great hock vineyards of that place, where the wine known as hock is produced:

The hock vineyards do not contain all told, more than 75 to 80 acres, and in ordinary and good years the produce is not over 600 "stuck" (a stuck is about 1,500 bottles), which give us a total of 900,000 bottles, yet we are assured by reliable men engaged in the wine trade, that there are sold every year at the auctions held at the wine guts, no less than 6,000 stucks, all purporting to be the genuine hock. The kind of grapes mostly grown in these great wine yards are the Reisling, Traminer, Gut Edelen, Roland Orleans, Clevern, Fleisch, Oestreich.

From the Reisling variety are made those wines so celebrated and well known throughout the world, such as the Johannisbergher, Steinberger, Catinet, Raunthaler, Berg, Liebfraumilch and Marcoheunner. Very good wines are also made from the Traminer. The Fleisch is a red grape; the Clevern a reddish purple color, but is more grown in the Palatinate than here. The Gut Edelen and Fleisch have very thick skins and are only used as a table grape. The Reisling never produce in quantity as much juice as any of the other varieties, but it brings a much larger price. The Oestreich seems to be the general favorite for ordinary wines, and from this grape is made most of the sparkling Hock and Moselle.

For the Johannisbergher and other celebrated wines, in consequence of the demand for them, the wine merchants are unable to fill the orders; so they obtain wines produced in other localities, which assimilate to the taste of the respective wines, and label them with these popular names. They are sometimes nearly as good, though an experienced wine merchant will detect the difference at once by the taste, as quickly as he discerns the growth of one year from another.

At most of the hotels, the label does not indicate what the wines are, nor, in fact, can they afford them at the ridiculously low prices marked, such as from fifteen cents to thirty cents a bottle.

CULTIVATION OF CHESTNUTS.—Prof. J. P. Kirtland, with his usual interest and enthusiasm in the cultivation of whatever of fruit or vegetable that tends toward the comfort and support of mankind, has drawn attention to the cultivation of chestnuts—(see *Ohio Farmer* for Dec. 24, 1864.) In that article the Professor speaks only of his success in growing from seed. Will you permit me to add, that they can be engrafted with as perfect success as any other tree, by the means known as side grafting. Procure your scion early in spring, keep it in a cool, dormant condition until after the tree on which you are going to engraft it has swollen its buds almost to bursting, then cut the lower end of the scion in a wedge form, with a little slit or tongue on one side. Select in the tree a branch about the size, or perhaps a trifle larger than the scion—make a slice cut downward, and a tongue or slit on the inside of the cut corresponding with that on the scion—insert the scion, matching the one tongue into the other, and the graft has then the new wood and bark to match and connect in on both sides. Now wrap with bass matting, and cover with grafting wax to keep out wet. When the graft has made two leaves take off the top of the branch on which it is inserted to a corresponding number of leaves, and in July cut back the branch close to the graft.

As seedlings of the Marrow chestnut vary as much in quality as our common kind, where parties have the common sort and can get grafts of the Marrow, that are known to produce large and fine fruit, engrafting will be the cheaper and better way to procure the variety, but seedlings will come into bearing usually in about eight or ten years. The profit of growing chestnuts

and soft-shell hickory nuts, I have no doubt is equal to that of peaches or apples, once the orchard has arrived at maturity.—E. in *Ohio Farmer*.

SIEMPRE VIVA.—A friend furnished us with a description of this plant, to which we referred in our last number:

UNDYING PLANTS.—A letter from Guayamas, Sonora, Mexico, describes some of the strange and beautiful things found in that remote region, including a species of evergreen, as follows: Passing on beyond Aribechi, about two miles, we struck the bed of a stream through which we commenced our progress to another range of mountains, whose slopes came down to the very edge of the channel way. It was here that we found the north sides of rocks which faced the stream, covered by what at first seemed to be the most exquisitely beautiful green mosses that ever decked the rugged sides of a mountain. The entire sides of the mountain at this spot were blooming in the liveliest green. We dismounted to pluck some of these plants and found that they were not strictly mosses, though undoubtedly they belong to that class of plants. Each one had separate roots firmly holding it to the rocks, and from these roots grew out a plant that opened to the diameter of a common teacup or a saucer, and spread itself flat on the face of the rock. The leaf somewhat resembles in texture the *arbor vita*. These plants bear the name of *siempre viva*—always living, or always alive. Their peculiarity is to come out into beautiful green life in the rainy season, and then when all moisture has deserted them, to turn as brown as autumn leaves, and roll or curl themselves like a ball, as uninteresting to see as a brown stone, seemingly dead. But with the return of moisture they uncurl their leaves and spread out again as beautiful and green as ever. Another peculiarity of the plant is, that you may pluck it, throw it into your saddlebags, and keep it six

months; and then place the roots in a cup or saucer of water when you retire for the night, and in the morning you will find by your side a lively green plant. It looks like magic; but I have tried it to my surprise and delight. The plant never dies; its life is immortal, and its beauty of texture, and form and color is renewed or continues with the continued supply of moisture.

N. Y. State Journal of Agriculture.

EVERGREEN HEDGES are not only the most ornamental enclosures for pleasure grounds, but they impart a richness to the whole place; and nothing so effectually shuts out from view unsightly objects upon adjoining lands. Summer and winter they are equally well clothed; they soften the arid winds of summer which dry the ground too quickly; and they break the force of winter gusts, and their shelter keeps the ground warmer in winter. Many kinds of ever-blooming roses and other half hardy plants pass through the winter uninjured upon grounds enclosed by evergreen hedges; while the same kinds of plants in the same neighborhood, on open grounds, are totally winter-killed.

There are several species of evergreens suitable for hedges, and some of them flourish better upon one kind of soil and exposure than upon others; therefore, those who are about setting out evergreen hedges should first consult their own taste; choose those that will best suit their soils and exposures, and have them planted at the proper time. All the *Arborvitæ* make beautiful hedges, the American is the best, and thrives upon a greater variety of soils. The *Hemlock Spruce* makes a most beautiful, strong and lasting hedge; the *Norway Fir* is now much planted for hedges, and is most admirably suited for that purpose; it is beautiful, strong and lasting, and, like the other two, it is very hardy, and even more beautiful in winter than in summer. The best time to plant evergreen hedges is from the middle of September till the end

of October, but not until the soil gets well moistened with rains. We have planted many hedges in November that succeed admirably. The trenches should be dug of a depth and width suitable to hold all the roots of the plants without bending them. The distances of the plants in the rows will be according to the sizes of the plants when set out. Two or three feet high plants are most generally used for hedges; but, where immediate effect is wanted, plants five and six feet tall are used; we have succeeded with all sizes, so may others.

TRAINING THE TOMATO.—In cultivating the tomato in large market gardens, the plants are usually pinched before their final transplanting, and they are then left to grow without any support; but in small gardens, not only is greater neatness observed by taking some pains to train the plants, but the fruit is improved both in quantity and quality. There are several methods of training. One which, if not altogether the simplest, is one of the neatest, is described by Mr. G. M. Childs, of Hancock Co., Ill. "As soon as the plants are large enough, transplant to rich, light soil, one in a hill, and at least five feet apart each way. At least once a week, scoop the earth away from around the plant and pour on a quart or more of soap suds. When the plant commences to branch, cut off the outer branches; this will have a tendency to increase the size of the stock and cause it to grow bushy. After the plants are 16 to 18 inches high, they should be provided with frames. I make mine by splitting standards from pine boards 5½ feet long, and sharpen their lower ends.—To these standards are nailed slats made by sawing 4 feet laths into three pieces.—The frames are made 16 inches square, nailing the lower slats at 15 inches from the bottom of the standards, the upper ones at the top, with others mid way between the two. Frames made this way have been in use five years, and with a little repairing will last some years longer. When the

branches extend beyond the slats and over the top of the frame, clip them, leaving one leaf above the fruit stems, and continue to do this throughout the season. The plant trained thus and showing its ripe and ripening fruit, forms a most beautiful object, and one tomato grown in this way is worth a dozen as usually cultivated. Last year I had 21 plants, from which I gathered an abundance of fruit for table use and canning for a family of five persons, besides distributing from five to six bushels among my friends. No one need to be afraid of using the knife freely, as there is no danger that the plant will not fruit abundantly. In my experience the difficulty has been to keep it from fruiting too much."

CALIFORNIA GRAPES.—In a late number of the *California Farmer*, we find among the list of acknowledgments of fruits, &c., received, the following description of some well-known varieties of the foreign grape:

To S. W. Shaw, of Sonoma, we are most grateful for a very liberal donation in the shape of a box of splendid grapes, and such grapes! How shall we describe them,—by weight, by measure, or by appearances? O, *Shaw!* we can't do it; we *can* tell how *many pounds* each bunch weighed, but to tell of their *beauty* as they lay revealed requires the pencil of a true artist, so we must have a painting of them.

The fruit, however, was indeed most excellent. The Chasselas of Frontinac and Muscat of Alexandria had berries measuring 3 inches in diameter, and noble bunches too; Black Hamburg, noble berries and bunches weighing 3 to 4 pounds; Reine de Nice, magnificent, both in bunches and berries. Such fruits speak both for our climate and soil. With very grateful acknowledgements to our friend we will think of him as often as we eat.

GRAPES AND FIGS.—"Sitting under our own Vine and Fig Tree."—Not exactly under the vine and fig tree, but before the products thereof, and that is *better* than sit-

ting under either vine or tree, provided they were the *sour kind* that we *could not reach*. The last week we received a box of very ample dimensions of delicate grapes, just as we were going to press, and we promised to speak of them as they merited this week. We shall do so now, not merely to express our grateful thanks for the liberal doner, but to show the capabilities of our climate for the production of as fine and luscious grapes as the world can produce.

This box of grapes came from the splendid "Gardens of the Alhambra," situated near Martinez, two and a-half miles from the landing, in a beautiful valley once a wild, but now one of the most beautiful spots in California. These orchards, gardens and vineyards of Dr. J. Strenzel are in the highest state of cultivation, they are extensive and producing very abundantly every kind of orchard fruit, many thousands of gallons of wine annually, figs, pomegranates, oranges, lemons, etc. But the grapes we recently received were as follows: Reine de Nice, bunches 3 to 4 pounds, and berries 2 to 2½ inches in diameter, solid, yet luscious and beautiful enough to tempt the gods, *i. e.* to eat them; Royal Muscat, Muscat of Alexandria, and Canon Hall Muscat—all magnificent; St. Peters, Black

Hamburg, Victoria Hamburg, Grey Chaselas, Isabella, Palestine and Corinth. The Reine de Nice and Muscats were gorgeous and delicious, as well as beautiful, the Corinth, *seedless*, were second crop, but delicious—all were really of a quality to make us feel proud that our State can produce such fruit—and our State may be proud too that such men live in it to make the *wild places of the earth* become beautiful gardens, as the Doctor has done in his case, very much to his own honor and the credit of the State. In returning thanks for so generous a remembrance, we can only hope the Doctor will never have any poorer grapes, and his crops always on the increase. Such men deserve a glorious harvest.

[We have heard of the wondrous productions of our Pacific States, and our eyes have been gratified occasionally at the sight of huge Duchesse d'Angoulême pears, weighing two and a-half pounds, and of the Belle Angevine of still greater dimensions. But this story of the grapes has too much of the "Munchausen" about it to be believed by us, or our matter-of-fact readers. Friend *Farmer*, have you not forgotten your mathematics and the definition of diameter? Circumference we imagine would be the proper word.—Ed.]

CORRESPONDENCE.

WAWKON, ALAMAKEE CO.,
IOWA, October 26th, 1865.

DEAR SIRS:—

Do you remember, Messrs. Woodward, little Wawkon, away out West and away up North in Northern Iowa, on the "most beautiful of all prairies," where the sparkling water bubbles up by the wayside; where greenest of grass and brightest of prairie flowers delight the eye and load the purest of breezes with their fragrance? And do you remember the little knoll on the east side of the village, where the crab apple opened its gorgeous bloom, and the hazel ripened its nuts, and the brown

thrush welcomed the morn with her gushing melodies? Well, the crab apple has given place to the *spy*, the hazel to the vine, the brown thrush is joined in her song by the canary, the robin builds her nest in the fir tree, and here is the little brown cottage that I call home. Within its humble walls this rainy October day, I have been having a social interview with Woodward, Meehan, Robinson, Emery, Barry, and other Horticultural friends.

The chief topic of conversation to-day has been the grape, and a solemn case they make out. From Alton, Bloomington, Cincinnati, Rochester, Hudson River and

Philadelphia, almost everywhere, in fact, the burden of report is mildew and rot, rot and mildew. What does it mean? What is the cause? What is to be the result? Is our whole system of cultivation so wrong that it thus generates disease? Are our varieties naturally feeble? Is the climate so unfavorable as to *create* these ills? Does this widespread disaster point to annihilation?

Now don't laugh at me for writing about grapes from this frozen spot where the intense cold of winter is such that the mercury frequently indicates a temperature of 35°, and kills a peach tree or Baldwin apple or Bartlett pear tree as surely as an orange; for, the fact is, that even here I have been a good deal troubled with the "grape on the brain." I have been dabbling with them in a small way for eight years, and have now a collection of 22 kinds, including the most popular, mostly in bearing, and I have never yet seen a *single mildewed leaf* or *rotten grape on them*, or within miles of them.—Now, I am unable to decide whether this remarkable health is attributable to the climate, or soil, or mode of cultivation, or pruning.

Solon Robinson says, that grapes "have *mildewed* this year *worst* upon the *BEST SOILS, judiciously cultivated, fertilized and pruned.*" Now I think that "*the above is a striking example of a man jumping at a conclusion.*" Is it not *barely possible* that *somebody* may be mistaken as to what *actually* is the *BEST SOIL*, most judicious cultivation, fertilizing and pruning for the grape? The plan usually recommended *is not successful*. In fact, we have high testimony that the better (?) they are treated the *worse* they are diseased. Does not this rather tend to shake our confidence in the *accepted standard of goodness*?

Now, one word for "*my way.*" I prepare the ground as for *corn*; I never manure; plant six inches deep; cultivate like corn. Practice summer pinching promptly but sparingly; prune moderately; bury in fall, and gather immense crops of large, healthy,

high flavored, perfectly ripened grapes of all the leading kinds, including *Catawba*. Don't laugh about my ripening *Catawbas* up here, for I *can* and *do* do it *thoroughly*.

In short, at a very moderate cost, I have been *SUCCESSFUL*. Is it the climate? Is it the soil? or is it the treatment? Something it is; what is it? Are old grape growers as anxious to learn as young ones? *Let there be light.*

Yours, &c.,

D. W. ADAMS.

MESSRS. GEO. E. & F. W. WOODWARD.

EDITORS OF HORTICULTURIST:

I have read with much interest your correspondent, Wm. Day's Essay on Strawberry Culture, in the October number of your journal. Having some experience myself in the propagation of the strawberry, was glad to find our ideas so fully considered. I have but one objection to make to his plan of operations, and it is on that account that I trouble you with this article, to prevent others from being misled by it.

He asks, "what do you do with the runners?" and answers, "cut them off as fast as they appear."

In this, I think he is much mistaken in doing. Now the tendency of this operation as I have found from experience is, to induce the hill of plants to assume a dense tussock-like state, with the crown of the roots thickened into hard excrescence shaped heads; or in other words, hastens the maturity of the plant, and makes it as worthless for bearing in the second, as under other management it would be in the fourth year. Throws all the vigor of the growth, after the fruit is gathered, into the original plant and making it prematurely old. The effect of this is to reduce the size and quality of the fruit. You may produce a large number of small insipid berries, but nothing to compare in size and flavor with those grown by other treatment; nor will the *measured* quantity be nearly so great.

My plan of cultivation, as respects the runners, is this: after the crop is gathered,

remove the mulching, dress up the ground with the hoe, and leave the plants to take care of themselves. They will thrust out runners in all directions, and in time cover the open spaces. Pull out the weeds and grass from time to time from among them during the summer, so as carefully to keep them from being smothered by noxious weeds, and at the time of weeding pull up the runners when they appear too rampant by the handful here and there, roughly handling and tearing them apart as you do the weeds. In the latter end of September go to work at your bed in earnest, remove all the runners, and make such cultivation of the soil as its nature may require; if a stiff clay, a little digging around the hills may be necessary, and as cold weather approaches mulch them down for winter.

The effect of this will be that the plants in the hills, instead of the tussock-like appearance with large, dense, small stemmed and small leafed tops, we have a fine, open, spreading, youthful looking plant, with thick stems and large leaves, ready for the next bearing season, because it has not been concentrating its efforts to mature itself, but expending its efforts in a numerous progeny of runners. The foregoing has been my plan, and it has produced much better results in my hands than ever I could obtain from the plan of your correspondent, which I have also tried.

FRAGARIA.

Philadelphia, Oct. 12, 1865.

MUCK WATER. — AN EXPERIMENT. — LORD BACON says, "to water it (the soil) with muck-water is not practiced," and yet I think it might be done with good effects, since the muck itself is held in a state of minute division by the water, and by its percolation, brought into immediate contact with the roots of plants. I, this year, made the following experiment:

Selecting three equal rows of Indian corn, about one foot in height, growing on a light sandy soil, I applied to the first row a liberal quantity of unleached ashes,—say

one half pint to the hill—to the next row I gave a dressing of strong barn-yard liquid manure, and the last row I "comforted" twice with muck-water.

I waited anxiously the result; and on harvesting, I found the three rows far superior to the remainder of the field. The row which received the ashes was the heaviest; that which received the muck-water came up very close to it, and that which had the liquid from the stable lagged behind.

The muck-water was taken from a trench from which peat had been thrown, and was nearly as black as ink.

Is it not possible, that, as in the days of Bacon, we still undervalue one of our most common fertilizing agents? But *verbum sat*.

E. NASON.

"Brightside," N. Billerica, Mass., Oct., 1865.

IN the May number of the HORTICULTURIST for 1863, Horticola says: Last fall, I planted six or eight hundred cuttings of the Delaware, the Diana, and a great many other kinds, and covered them up a little, induced by Mr. Fuller's advice. Next fall I shall faithfully report the result obtained.

Now we should have had that report a year ago, but I am very sure there has been nothing in regard to them in the HORTICULTURIST since. I am very anxious to learn how they succeeded, as I want to plant out some thousands of Delaware cuttings if it will pay. If they cannot be made to grow so as to make good vines, I do not want to go to the expense.

Very truly,

B.

PITTSBURGH, PA., October 19th, 1865.

MESSRS. EDITORS HORTICULTURIST.

GENTLEMEN, — I am about setting out a small orchard of Quinces, and seeing in your December (1862) number a mention of Rea's seedling as being of extra size and flavor, I take the liberty of writing to know where they could be obtained. Some time ago, I wrote to Mr. Rea, but never received an answer. I wrote also to Ellwanger &

Barry for it, but they knew nothing of it. If you cannot give the information desired, be good enough to ask your readers: also, if they know of the Chinese variety: how it will compare with the others, and where it can be obtained. A good and exhaustive article on Quinces,—varieties, modes of culture, &c.—by some one who has made a specialty of raising them, would, I think, prove very acceptable to a large number of your readers.

C.

HERBEMONT VINEYARD,
Warsaw, Ill., Nov. 6, 1865.

MESSRS. WOODWARD:

SIRS,—Inclosed find five dollars (\$5), for advertisement. I have sold all my vines, and could have sold ten times as many if I had them. I am very much obliged to you, and shall know where to advertise in future.

I hope to pay you more money for advertising next year than I have this.

Respectfully,

C. J. MAY.

MESSRS. EDITORS,—I do not think the Strawberry is fairly treated in the HORTICULTURIST. I mean we do not hear enough about it. There must be scores of readers who have tested, this present season, from six to sixty new kinds, and certainly some of them ought to have life enough to give their experience to the rest of us. We want to know what kinds are really best among the numerous new varieties; and in particular, want to know something about Alpine strawberries, raising plants from seed, &c.

J. M. M., JR.

EDITORS OF HORTICULTURIST:

DEAR SIR,—I have a piece of ground which I intend to plant in crab apples; it will take about 100 trees. I am unable to ascertain where I can get the best kind for making the best cider, and for good bearing.

You would oblige me by giving me information to whom I have to address myself,

and which is the best kind. Excuse the trouble.

T. S.

[WILL some one who has crab apples please let the public know?—ED.]

PENN-YAN, October 19, 1865.

MESSRS. EDITORS.—I have been very much interested in a bed of seedling verbenas. Although the seed was not planted until May 24th in the garden, yet we have had a remarkably fine show. The best seedlings, all things considered, I ever raised—of almost every shade of color, and some with very fine eyes, both light and dark. Last year I had a fine seedling, Magenta color, white eye, which unfortunately burned badly in the sun, and as it seeded very freely I saved the seed which produced this year almost every shade from pink to scarlet and even deep purple. But one of my greatest novelties, on account of size, is a verbena with, I think, the largest umbel I ever saw. It measures $1\frac{1}{8}$ inch across, while "the Banner" which is a good sized flower, measures 6-8. After I had finished planting my bed, I had some seed left which I scattered on the ground—no covering at all—and it germinated better than much of the seed which was planted, although I generally try to give a very light covering.

T. F. W.

THE CULTIVATOR AND COUNTRY GENTLEMAN, (weekly), Two dollars and fifty cents per annum. One of the best agricultural papers in this country. A paper that ought to be found in every farm house. It seems almost as absurd to argue in favor of every farmer taking an agricultural paper as to argue in favor of sunlight or fresh water; and yet, strange as it may seem, there are men to be found whose life-long occupation has been Agriculture, who have reasons to advance against taking or reading an agricultural paper. Public opinion is changing matters fast. The farmer who takes an agricultural paper, stands head and shoulders higher than his neighbor who does not. The latter drops back among the uninformed laggards of the day.

TUCKER'S ANNUAL REGISTER for 1866, now ready at this office, price 30 cents, post paid to any address. It contains about 130 engravings, and will be found as fresh and varied as any of its predecessors.

The previous numbers of the Annual Register, except numbers 1 and 3, for 1855 and 1857 (and these ought to be re-published at the earliest possible moment), can always be had. Complete sets on large and finer paper, in four handsome volumes, containing over 1,300 pages and 1,600 engravings, by mail, post paid, six dollars; or each volume sold separately at one dollar and fifty cents. A work of great value.

THE AMERICAN AGRICULTURIST.—Monthly, \$1 50 per annum. Messrs. Orange Judd & Co., the proprietors of this popular, well edited and handsomely illustrated periodical, which occupies the front rank of prosperity and usefulness, have, we understand, purchased the "*Genesee Farmer*," with 20,000 or more subscribers, and united the two. By this arrangement, the editorial services of Mr. Joseph Harris are secured to the AMERICAN AGRICULTURIST, and they are thus enabled to offer increased attractions for the coming year. Mr. Harris, who is well-known as one of the most thorough, practical and accomplished agricultural writers in this country, will continue the articles which have added so much to his reputation: "Walks and Talks on the Farm." Harris' Rural Annual has also been purchased, and with the resources and talent of the office of the AGRICULTURIST, will be made a popular national publication.

THE SOUTHERN CULTIVATOR.—Athens, Georgia. Monthly, Two Dollars per annum. This, we welcome back to our exchange list, after an interval of four years, during which it has been regularly published.

We had the pleasure of several calls at our office recently, from Mr. Wm. N. White, publisher, who has been in this vicinity

several weeks, making his business arrangements.

We call the attention of our readers to this paper as worthy of confidence and patronage, and a thorough exponent of Southern agriculture, &c.

EIGHTH ANNUAL REPORT of the Board of Commissioners of the Central Park.

THE FARMER.—Richmond, Virginia.—A new monthly journal, commencing in January, 1866, and devoted to Agriculture, Horticulture, the Auxilliary Mechanic Arts, and Household Economy. Three Dollars per annum. The projectors promise that "the best talent, both practical and theoretical, which Virginia affords, will be commanded in aid of this enterprise, and no expense will be spared in the effort to make the journal complete in all respects." Messrs. Elliot & Shields, of the *Richmond Whig*, publishers.

GRAPE CULTURE in Steuben County, N. Y.—Premium Essay.—From Col. B. P. Johnson, Secretary New York State Agricultural Society, Albany, N. Y. Crooked Lake is in Steuben county, and the western shore of this lake has become a famous locality for vineyards. This essay gives full description of the lands, mode of culture, &c.

THE SCIENTIFIC AMERICAN.—Weekly, Three Dollars per annum; Munn & Co., 37 Park Row, N. Y. Across the hall from our office are the publication rooms of this valuable standard journal; a journal that we name as a model of editorial talent and ability, and of typographical beauty and excellence. We consider it one of the most valuable publications of the day, and we earnestly recommend it not only to our readers, but advise them also to call the attention of their neighbors and friends to it. Every inventor, engineer, mechanic, farmer and apprentice should take it at once, and the general reader who omits it, fails to keep up with the improvements of the age.





